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Liability Driven Investment Solutions

Richard Watts
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23rd June 2010



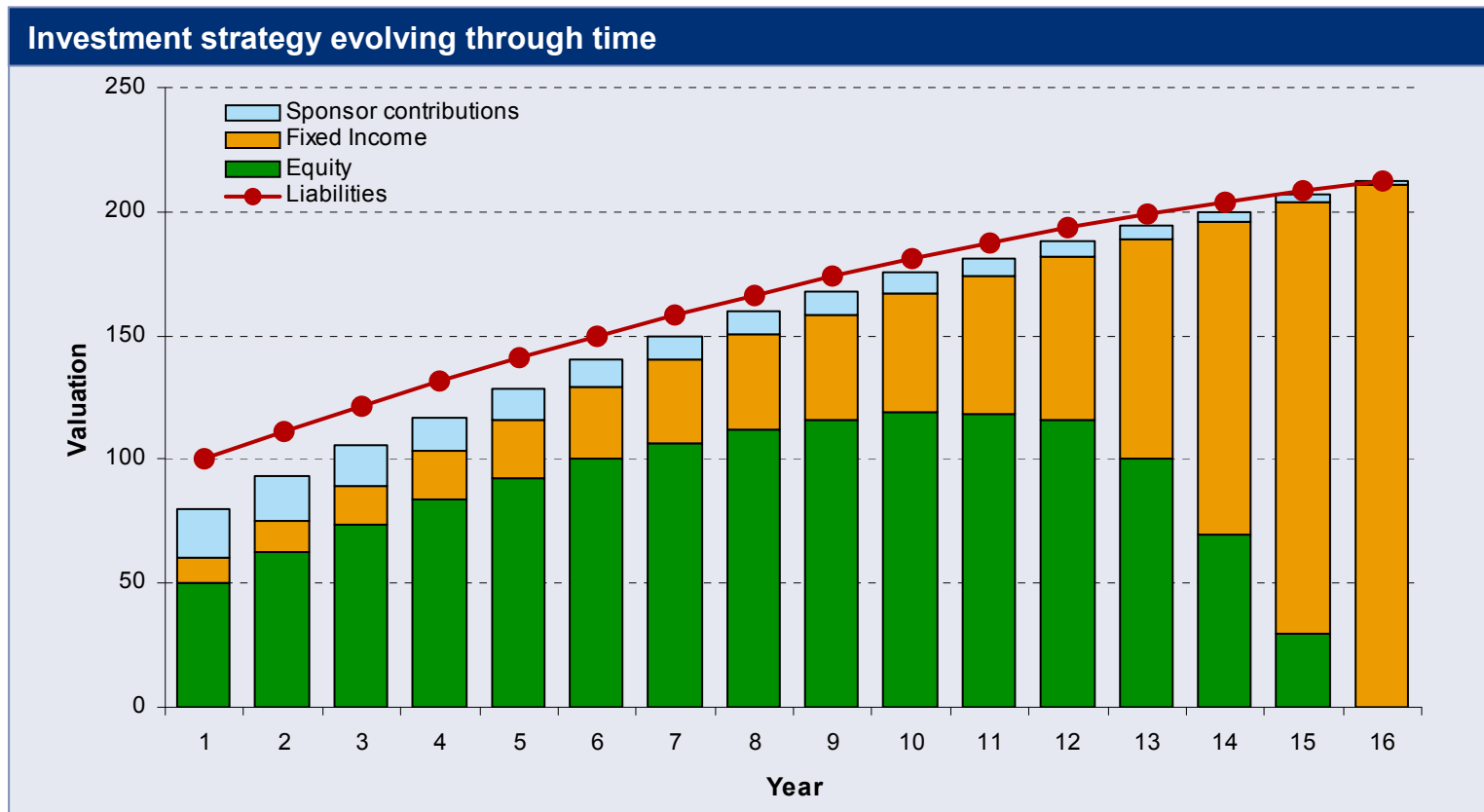
**Liability-driven
Investment**
F&C Management



Section I

Current themes

LDI strategies are dynamic



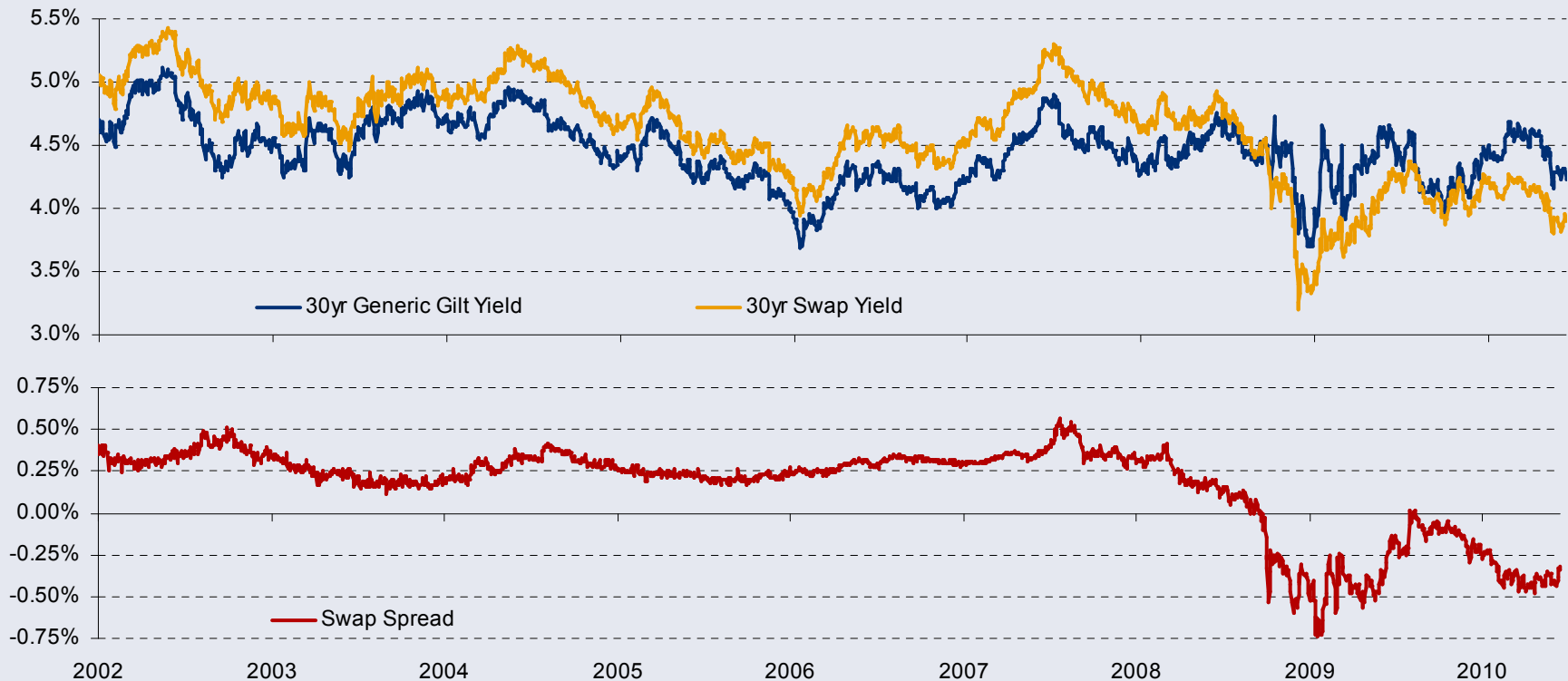
- LDI strategy is determined by a scheme's funding position
- Market opportunities can prompt changes to investment strategy

Current themes



Market opportunities: Gilts currently yield more than swaps

Significant and persistent inversion of swap spreads*



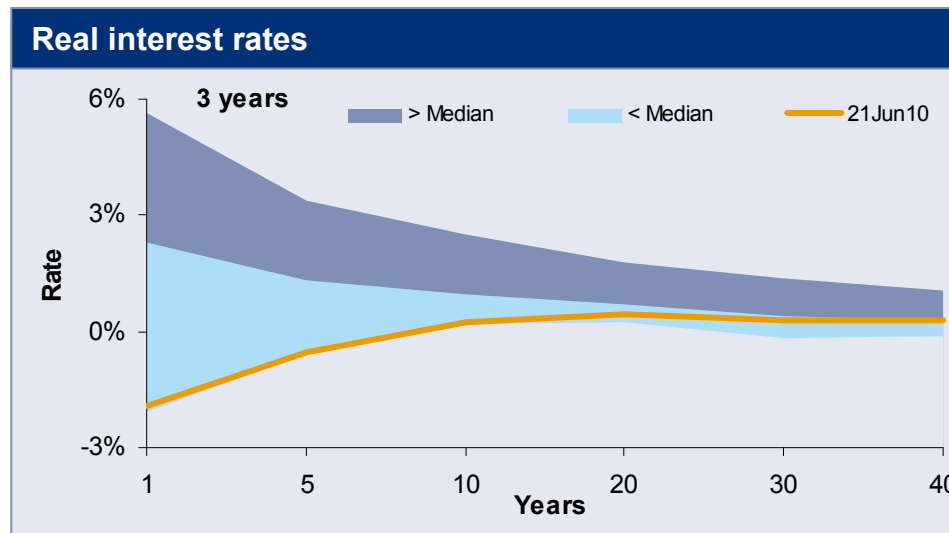
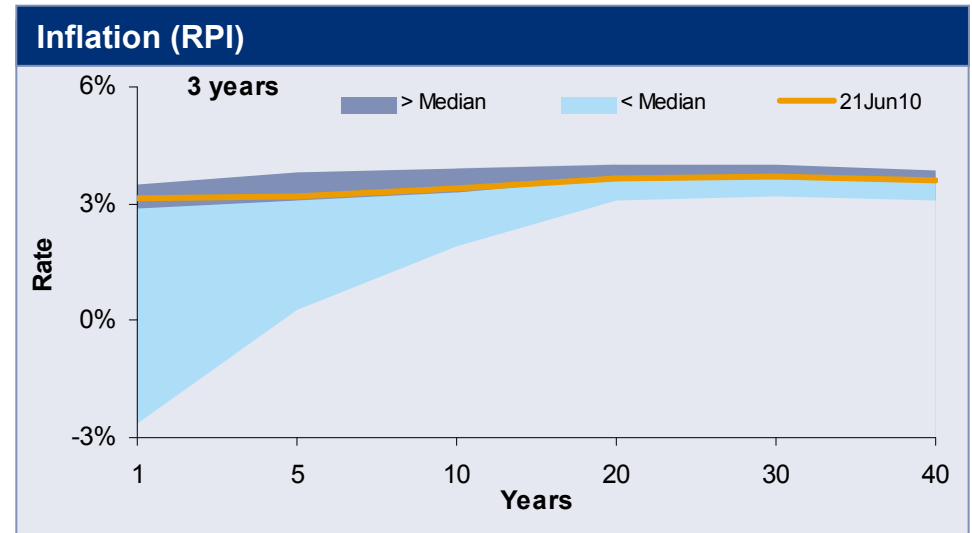
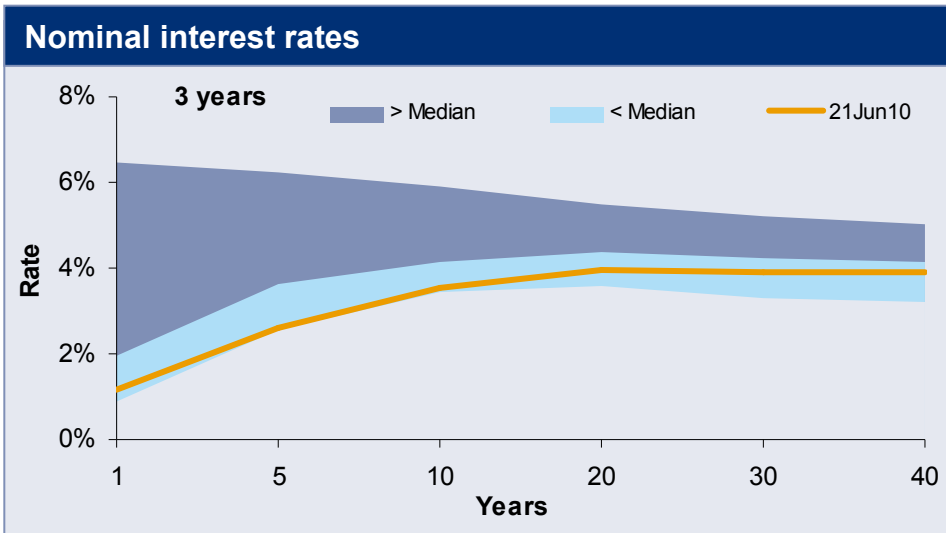
	High		Low		Latest	
30yr Generic Gilt Yield	5.121%	17/05/02	3.689%	18/01/06	4.227%	22/06/10
30yr Swap Yield	5.430%	27/05/02	3.202%	03/12/08	3.906%	22/06/10
Swap spread	0.563%	30/07/07	-0.739%	23/01/09	-0.321%	22/06/10

*Source: Bloomberg 22nd June 2010

Current themes



Market opportunities: Which rate to hedge?



Current themes



LDI investment solutions:

- Linking current themes to LDI products and strategies

The need for return
Higher yield on gilts than swaps



Equity-linked bond funds

Investing at the right market level



Triggers

Selecting the right time to hedge
Inflation, nominal and real rates



Inflation only hedging



Section II

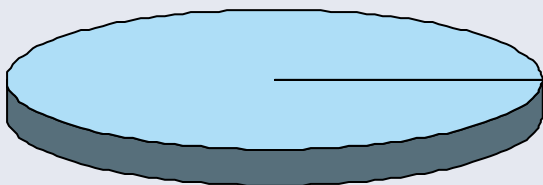
F&C's equity-linked bond funds

The F&C Equity-Linked Bond Funds

Full exposure to equity markets via investment in cash & futures

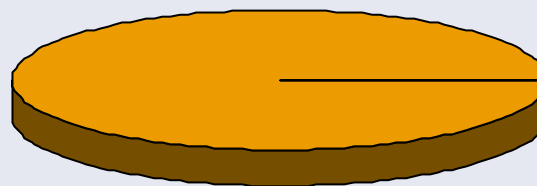
Physical passive equity can be replicated by holding "cash" & equity futures

100% passive equity



≈

100% cash



+

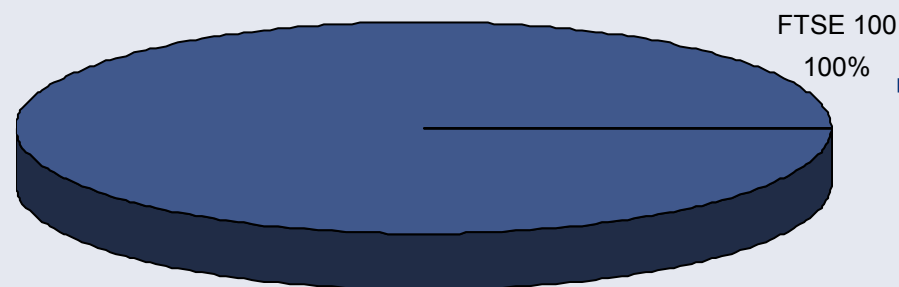
100% equity futures



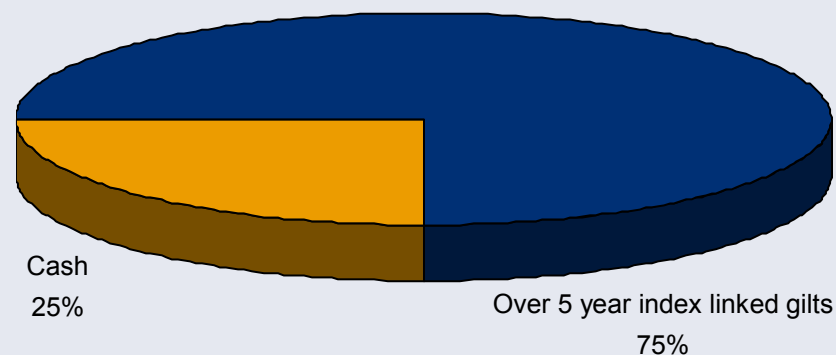
Replicates
passive
equity
exposure

The F&C Equity-Linked Bond Funds

F&C UK Equity-Linked Inflation Fund



- 100% exposure to FTSE 100 (futures)



- 75% Over 5 year Index-Linked Gilts
 - Passively managed
- 25% Cash
 - Deposits
 - Money Market instruments

- Equity exposure is achieved through FTSE 100 futures. Only 25% of the Fund's assets are held in cash to meet variation margin calls; therefore 75% can be invested in index-linked gilts
- The Fund will re-balance monthly to the asset allocation weights specified above

The F&C Equity-Linked Bond Funds

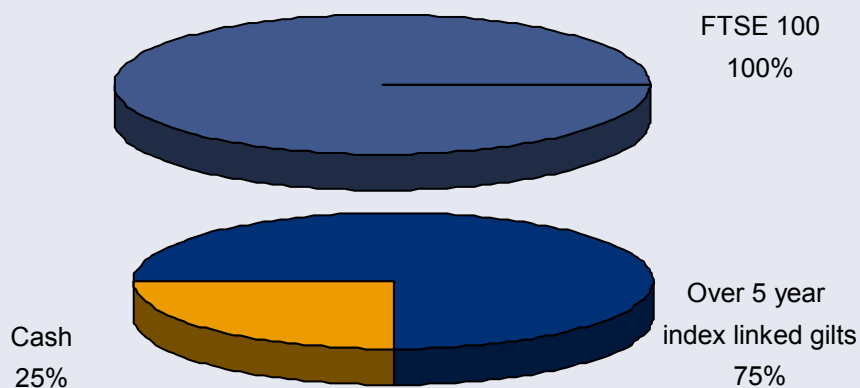


Key features:

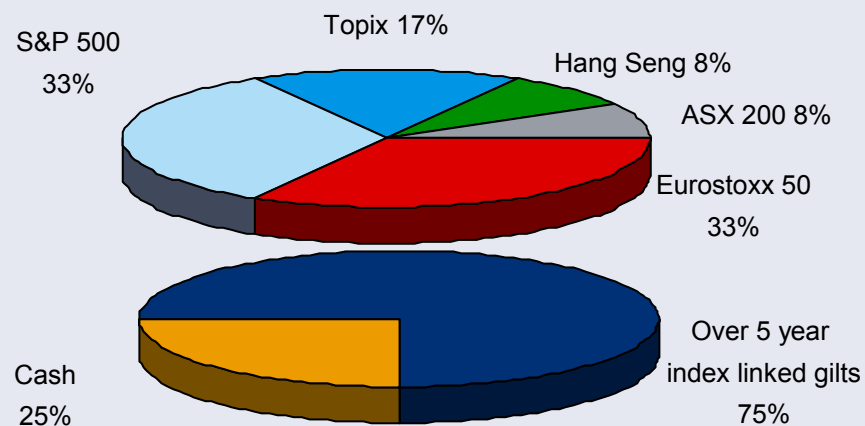
- Provides exposure to nominal or index-linked gilts
- Does not require a reduction in total equity investments made by the scheme
- No complex derivatives
 - Fund is prohibited from investing in over-the-counter derivatives
 - Fund generates equity exposure through exchange traded futures
- Counterparty / credit risk is very low
 - UK treasury (gilts)
 - Clearing house (equity futures)
 - High quality deposits / money market investments

The F&C Equity-Linked Bond Funds

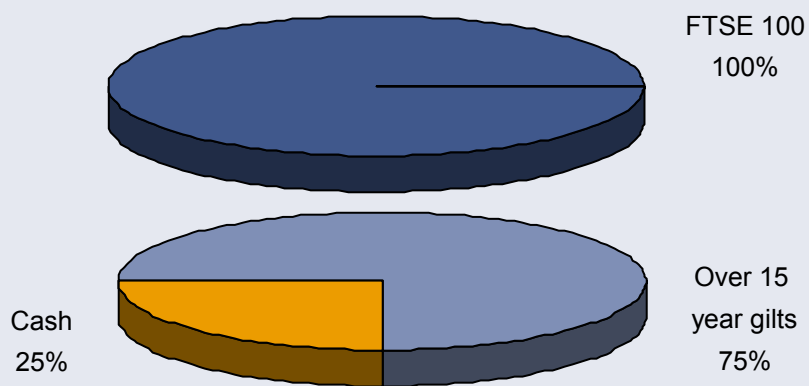
F&C UK Equity-Linked Inflation Fund



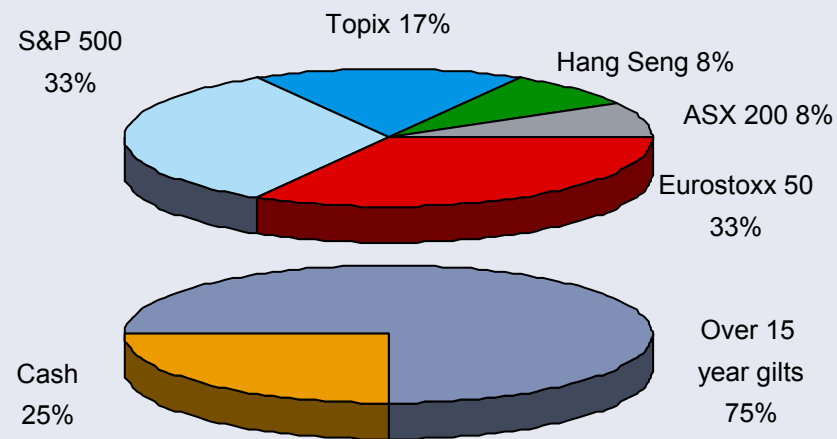
F&C Overseas Equity-Linked Inflation Fund



F&C UK Equity-Linked Gilt Fund



F&C Overseas Equity-Linked Gilt Fund



- Equity exposure is achieved through futures. Only 25% of the Fund's assets are held in cash to meet variation margin calls; therefore 75% can be invested in gilts
- The Fund will re-balance to the weights above monthly

The F&C Equity-Linked Bond Funds



Fund characteristics

- Liquidity
 - Daily dealing
 - Fund trades at a single price
 - Underlying investments selected to be highly liquid
- Fund structure
 - Strong governance and regulation
 - UK registered OEIC
 - UCITS III compliant
- Standardised legal documentation
 - Funds have a prospectus and an application form
- Robust independent oversight
 - JP Morgan (the depositary) provides third party monitoring
- Simple and low governance solution



Section III

Trigger based execution

Trigger based execution



Triggers explained

- Triggers are instructions for the Fund Manager to implement a hedge when the market reaches a specified level
- Monitoring
 - Triggers observed daily
 - Real time
 - Trade placed in the market at the earliest intra-day opportunity following the trigger level being reached
 - Implementation cannot be guaranteed, (market liquidity amongst other factors could prevent the transaction being dealt)
- Regular review of triggers with clients or their advisors to ensure suitability

Trigger based execution

Implementation strategy: The importance of monitoring triggers daily



- This is an example of a real trigger based implementation traded in September 2009 at the time of an ILG syndication
- Market traded below 3.55% intra-day for a period of a few hours only



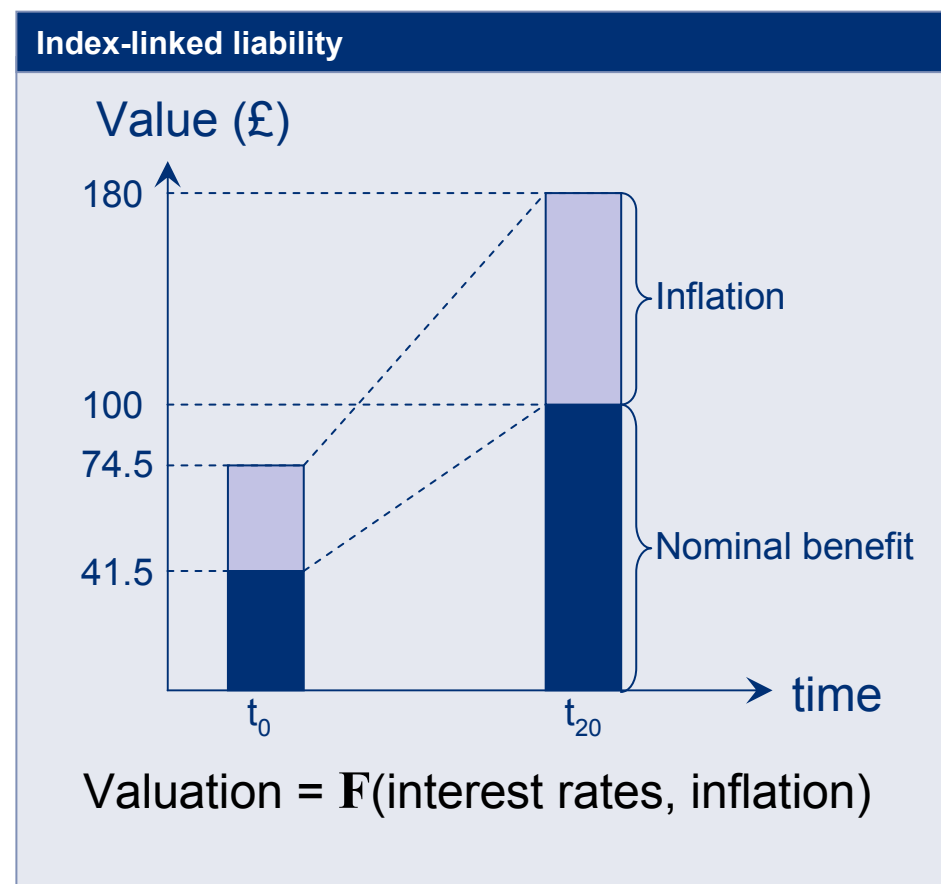
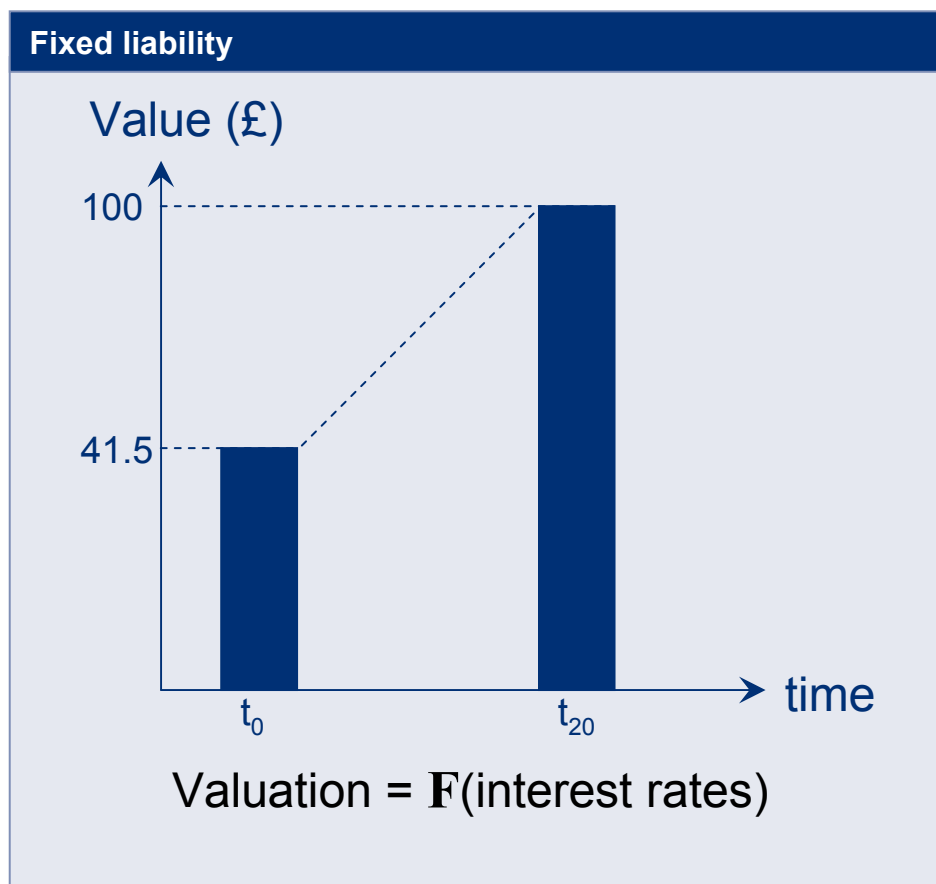
Section IV

Hedging inflation risk in isolation

Hedging inflation in isolation



Drivers of valuation

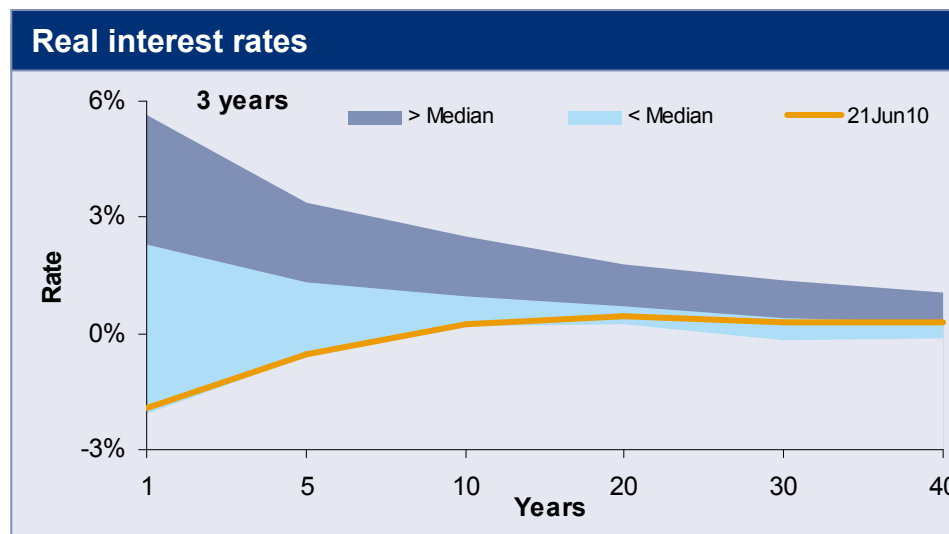
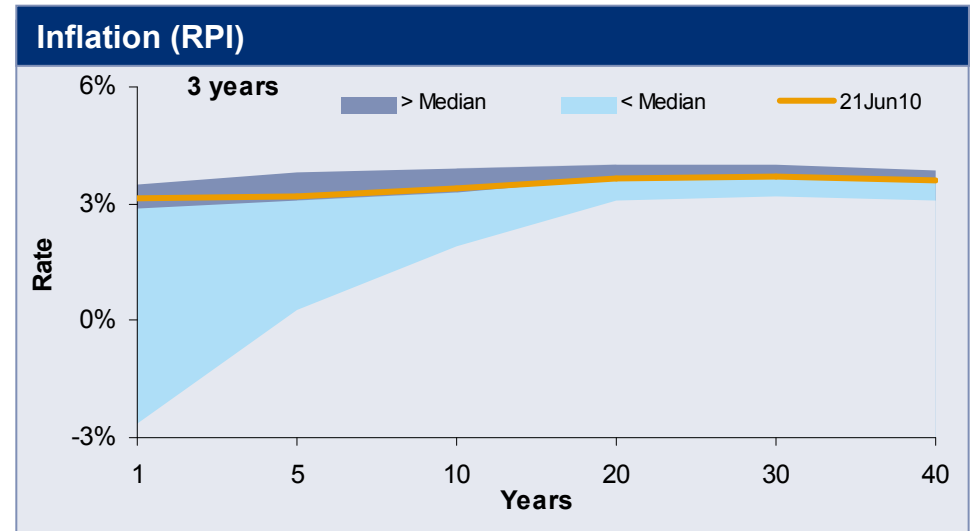
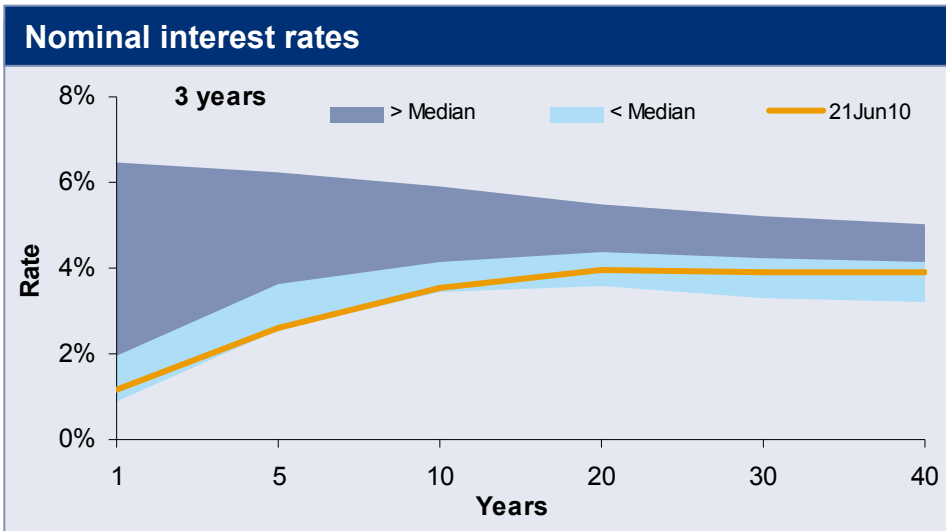


- Index-linked liabilities driven by real interest rates
- Real interest rates \approx nominal interest rate – inflation

Hedging inflation in isolation



Recap: Which rate to hedge?



Hedging inflation in isolation



Overview of the fund range

	Nominal interest rates	Real interest rates	Inflation
Liability	Fixed benefits	Index-linked benefits	(Inflation component of index-linked benefit)
Asset	Bonds, Swaps	Index-linked bonds, inflation-swaps, ground rents, infrastructure	Inflation swaps

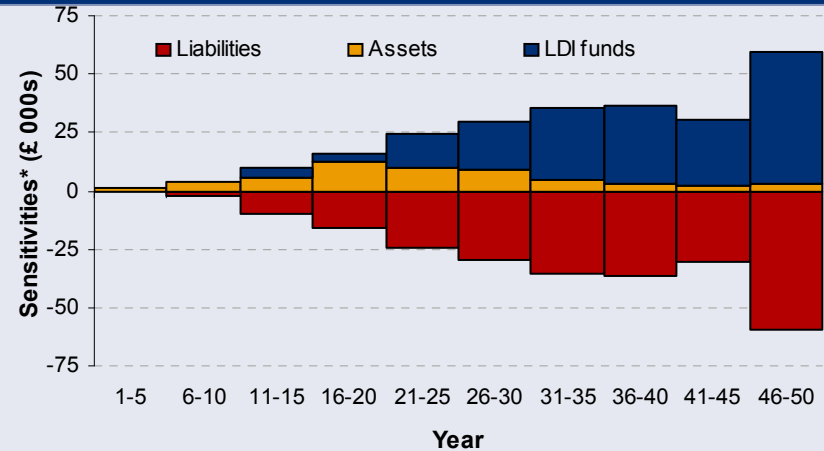
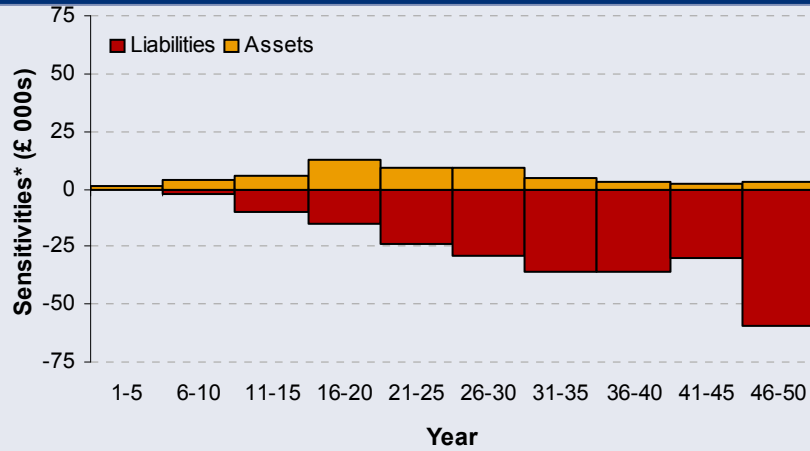
In 2009 F&C launched an LDI fund to enable schemes to hedge inflation risk in isolation

F&C's LDI funds

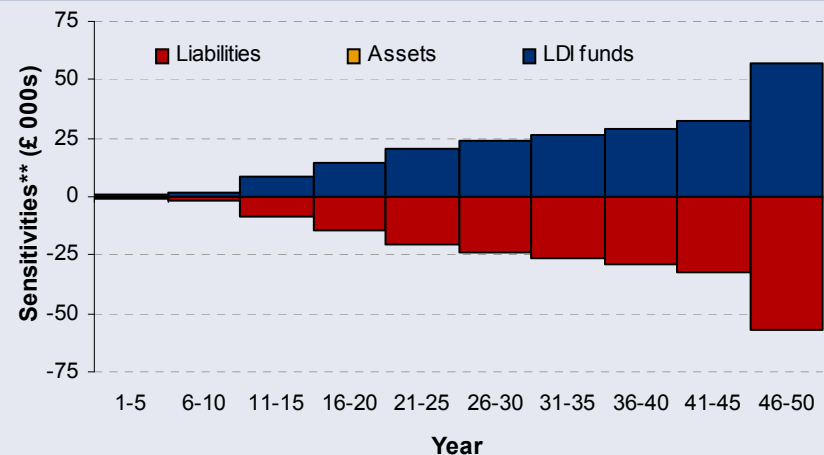
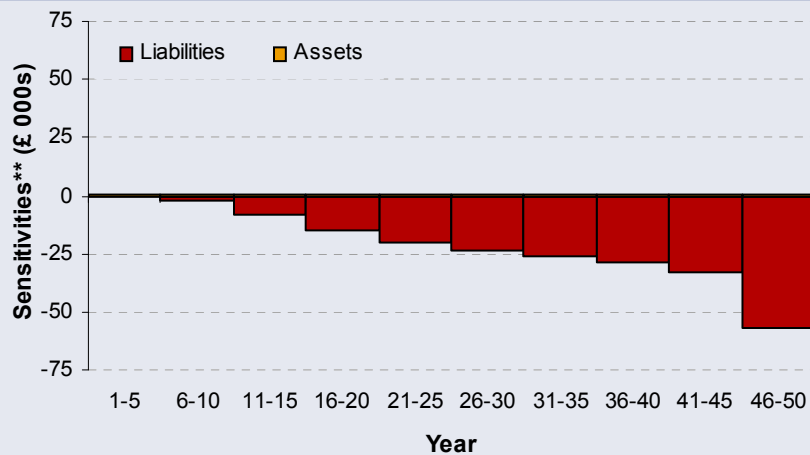


F&C's LDI funds

Nominal interest rate sensitivity by bucket



Inflation sensitivity by bucket



* Change in liability value resulting from a 0.01% change in nominal interest rates

** Change in liability value resulting from a 0.01% change in inflation



Overview of the fund range

- F&C launched its LDI fund product in 2006
- Choice of
 - LIBOR cash fund
 - SONIA money market fund (new in 2009)
- Choice to purchase protection against:
 - Real interest rates
 - Nominal interest rates
 - Inflation (RPI)
- The funds are leveraged up to 4x on average
 - SONIA funds (4x leveraged)
 - LIBOR funds (3x leveraged)
 - Money market funds are directly investable
- Rebalancing mechanism to prevent leverage becoming too high or too low
- Innovative principal counterparty structure utilising 'central clearer'
- LDI pools have an independent custodian and fund administrator

F&C's LDI funds



LDI fund range

Maturity	LIBOR LDI FUND RANGE	SONIA LDI FUND RANGE
	Common LIBOR targeting cash fund	Common SONIA targeting cash fund
2007-2011	LDI Nominal 1 LDI Real 1	LDI Nominal 1 LDI Real 1 LDI Inflation 1
2012-2016	LDI Nominal 2 LDI Real 2	LDI Nominal 2 LDI Real 2 LDI Inflation 2
2017-2021	LDI Nominal 3 LDI Real 3	LDI Nominal 3 LDI Real 3 LDI Inflation 3
2022-2026	LDI Nominal 4 LDI Real 4	LDI Nominal 4 LDI Real 4 LDI Inflation 4
2027-2031	LDI Nominal 5 LDI Real 5	LDI Nominal 5 LDI Real 5 LDI Inflation 5
2032-2036	LDI Nominal 6 LDI Real 6	LDI Nominal 6 LDI Real 6 LDI Inflation 6
2037-2041	LDI Nominal 7 LDI Real 7	LDI Nominal 7 LDI Real 7 LDI Inflation 7
2042-2046	LDI Nominal 8 LDI Real 8	LDI Nominal 8 LDI Real 8 LDI Inflation 8
2047-2051	LDI Nominal 9 LDI Real 9	LDI Nominal 9 LDI Real 9 LDI Inflation 9
2052-2056	LDI Nominal 10 LDI Real 10	LDI Nominal 10 LDI Real 10 LDI Inflation 10
	3 times leverage	4 times leverage
	Luxembourg domiciled Fonds Commun de Placement (FCP)	
	BBH act as fund administrator and custodian	



Section V

Wrapping up

Wrapping up



- An LDI strategy should be dynamic, driven by
 - Scheme's funding position
 - Market opportunities
- Some schemes cannot afford to wait to de-risk
- Some schemes may need to wait to de-risk by hedging their liabilities
- Time implementation of LDI strategy through the use of triggers
- Strategies discussed today are applicable to everyone; from £10m schemes through to £10bn schemes

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