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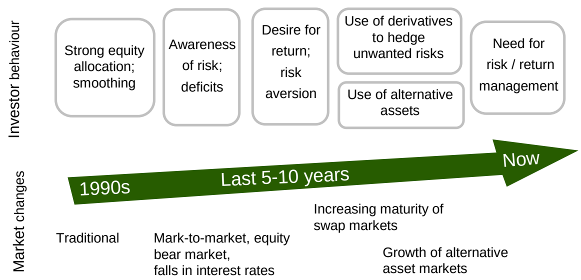
Current Issues in Pensions Seminar

21 February 2008: London: John Dewey
7 March 2008: Bristol: Stuart Jarvis
27 March 2008: Edinburgh: Iain Simpson
4 April 2008: London: Iain Simpson

Developments in Investment Products and Alternative Investment Classes

Speaker Name FIA
Barclays Global Investors

Understanding changes in markets and investor behaviour



Source: Barclays Global Investors

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Agenda

- Setting the scene
- Hedging the liability risks
- Building a growth portfolio
  - Market returns – "Beta"
  - Skill-based returns – "Alpha"
- Case study

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Setting the Scene

Three levers of pension fund management

Benefits	*Contributions*	*Investments*
		
Difficult to change	Company specific	Easy to change
Immediate impact	Impact depends on level/timing of additional contributions	Slower impact

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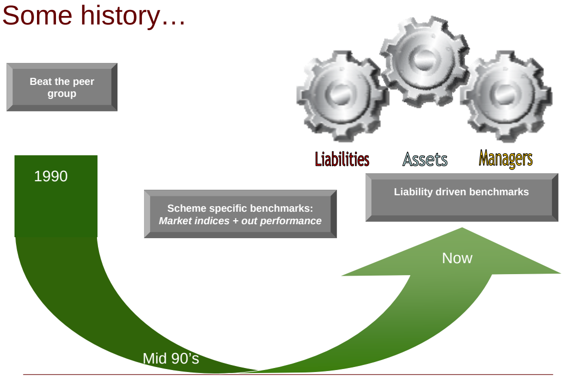
Some history…



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Industry regulations

- Accounting standards: assets and liabilities on the balance sheet
  - Volatility has a big impact on company accounts
  - Pension funds are looking to reduce risk
- Pensions Act 2004: scheme specific funding
- PPF levy

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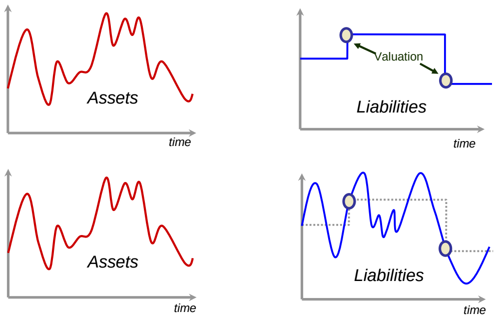
Perception versus reality



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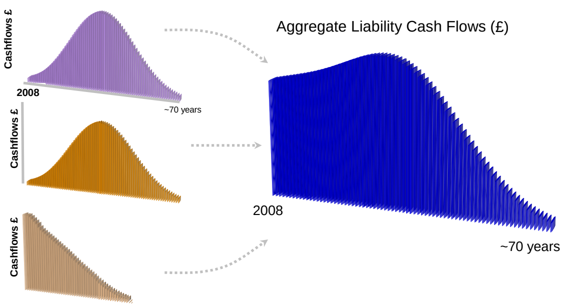
Hedging the Liability Risks

The nature of liabilities



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How does an asset-liability mismatch affect a typical pension scheme?

- For a typical pension scheme
  - Liability duration ~ 20 years
  - Asset duration ~ 5 years
- A 1% fall in interest rates
  - Increases liabilities by 20%
  - Increases assets by 5%
- What can you do?

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Liability driven investment

- LDI is ***not*** about:
  - Buying bonds at any price
  - Reducing risk to zero
  - Foregoing investment opportunities for the future

LDI ***is*** about:
- Understanding where risk is being taken
- Understanding the rewards for each risk
- Hedging unrewarded risks
- Diversifying the risks taken

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Liability driven investment

What are the benchmarks?

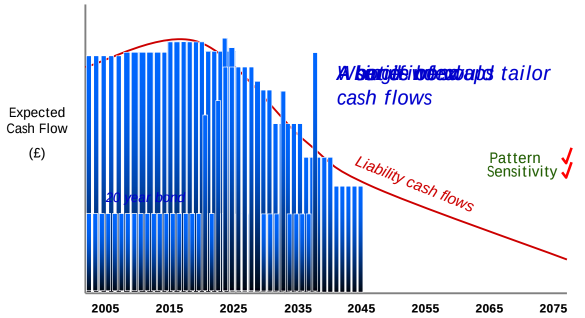
Investment objective = meet liabilities

or alternatively

Investment objective = liabilities + outperformance of *x*% p.a.

Source: Barclays Global Investors

Investing to meet liabilities – bonds vs. swaps



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Investing to meet liabilities – bonds vs. swaps

- Advantages of swaps compared to bonds
  - Better cashflow matching
  - Yield premium over gilts
  - No reinvestment risk
  - Less rebalancing required
  - Capital efficiency
- Disadvantages of swaps compared to bonds
  - Higher initial cost
  - More expertise required

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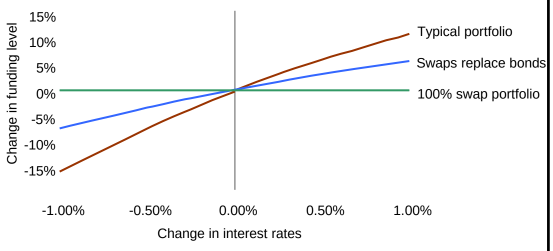
Sensitivity to changes in interest rates



Source: Barclays Global Investors - for information purposes only

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Implementing swaps: how?

	Direct swaps trading	Pooled funds
	Physical assets / *Swaps*	*Cash* / *Swaps*
- **Entity contracting derivatives**	*Trustee*	*Asset Manager*
- **Cost**	*High*	*Low*
- **Flexibility**	*High*	*Moderate*

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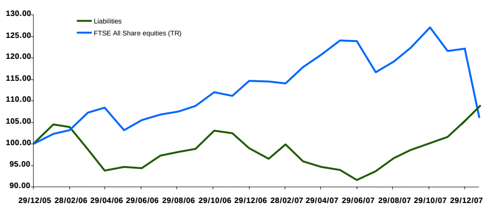
Implementing swaps: when?



- Typical pension liabilities in the UK 60% index-linked 40% fixed, duration approx 20
- Since the end of June the value of our liability index has increased by 15%

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Key points

- Interest rate and inflation risks significant and unrewarded
- Allocating to fixed interest reduces these risks
- Swaps give more flexibility and accuracy

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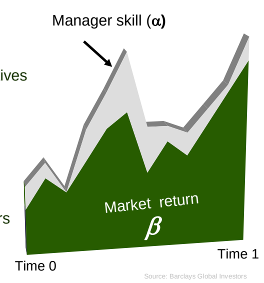
Building a Growth Portfolio

Sources of performance: market exposure and manager skill

- **Market exposure (*β*)**
  - Rewarded unconditionally
  - Cheap via index funds and derivatives
- **Manager skill (α) is conditional on:**
  - Market inefficiencies
  - Managers being able to exploit
  - You being able to access managers
  - Net of fees and costs…..



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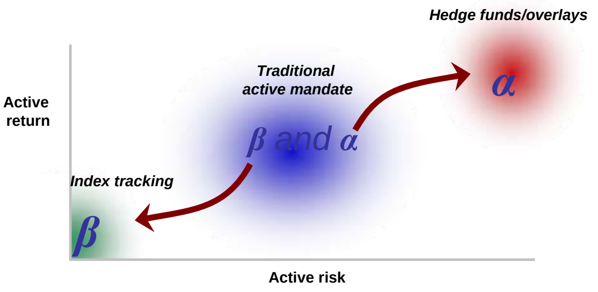
Market evolution of alpha and beta



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Market Returns – “Beta”

So which asset class performs best?

1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
+22%	+76%	+32%	+1%	+26%	+56%	+38%	+37%	+42%	+40%
+19%	+66%	+19%	-2%	+13%	+41%	+30%	+35%	+37%	+22%
+11%	+40%	+14%	-4%	+3%	+31%	+26%	+21%	+33%	+16%
+3%	+30%	+14%	-4%	-6%	+27%	+25%	+17%	+32%	+11%
-8%	+24%	+8%	-10%	-6%	+26%	+16%	+15%	+17%	+6%
-12%	+24%	-6%	-12%	-8%	+25%	+12%	+15%	+15%	+6%
-25%	+13%	-8%	-14%	-10%	+24%	+12%	+11%	+13%	-1%
-27%	+9%	-9%	-20%	-24%	+16%	+9%	+7%	+10%	-7%
		-31%	-30%	-28%	+13%	+5%	+7%	+2%	-15%

Spread of returns between highest and lowest performing strategies

49%	67%	63%	31%	54%	43%	33%	30%	40%	55%

Sources: Please refer to notes below.

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Investment opportunities have expanded

Traditional asset classes

- UK equities
- Overseas equities
- UK gilts
- UK index-linked gilts
- Corporate bonds
- Property

Alternative asset classes

High yield bonds

Convertible bonds

Hedge Funds

Infrastructure

Commodities

Private equity

Emerging markets debt

Emerging markets equities

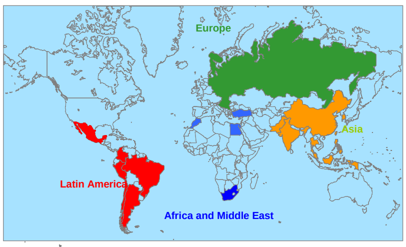
Diversifying your sources of return

Sources of return	Asset class
CREDIT Lending capital for interest	Corporate bonds High yield bonds
EQUITY Lending capital with a share in upside	Developed markets equities Emerging markets equities
INPUT TO PRODUCTION A factor other than capital	Commodities Property
ILLIQUIDITY Tying up capital over extended periods	Infrastructure Private equity Property
SKILL Return generated by skill	Active management Hedge funds

This example is provided for illustration purposes only. It does not represent a current investment recommendation.

Emerging markets equities

- Ownership of shares in less developed markets
- Around 9% of global market capitalisation



Source: FTSE, March 2007

Private equity

- Investment in unlisted companies
- Two common investment strategies:

VENTURE CAPITAL – financing early-stage, start-up companies

DEVELOPMENT CAPITAL – investing in larger, more established companies

Investing alongside management teams

Working with management to build and realise shareholder value

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Commodities

- Energy, metals and agricultural products
- Relatively independent from other asset class returns
  - Enhances overall portfolio efficiency
- Resilient during economic or geopolitical shocks
  - Exhibited stronger returns around extreme events
- Commodity futures are highly liquid

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Infrastructure

- Contracts to develop and/or upgrade public sector infrastructure
  - Schools, hospitals, airports, road and rail infrastructure and utilities
- Investors typically benefit from:
  - Long term, legally binding contracts
  - Predictable revenues – often inflation adjusted

but

- Can be illiquid
  - Listed infrastructure funds and investing in infrastructure equities can be more attractive

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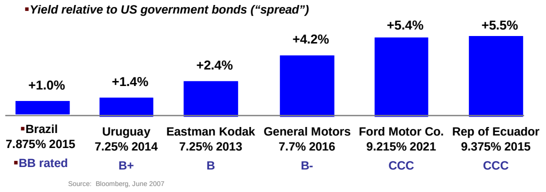
High yield bonds and emerging market debt

- **High yield bonds** are rated below investment grade
- **Emerging market debt** is issued by developing nations - some is below investment grade
- Higher yields compensate for extra credit risk



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Accessing sources of return

	Example	Advantages & disadvantages
DIRECT HOLDINGS	Private equity Property Infrastructure	Illiquid
LISTED SECURITIES	Equities Convertible bonds	Liquid May incur taxes Pooled funds/ETFs simplify admin
DERIVATIVES	Commodities Em. Markets debt High yield bonds	Often highly liquid Not available in all markets Credit risk of counterparty Tax efficient

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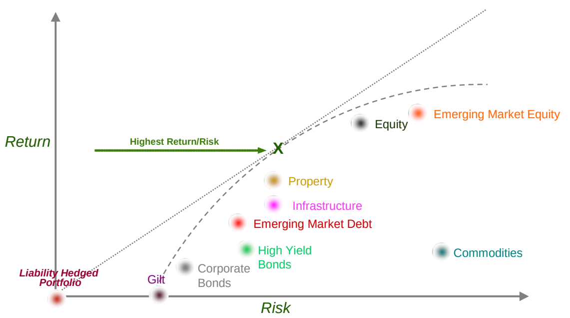
Diversification in theory



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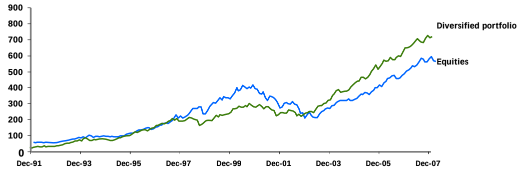
Diversification in practice



	Return	Risk	Efficiency
Equities	11.4	12.7	0.4
Diversified portfolio	13.1	9.9	0.7

Source: Barclays Global Investors

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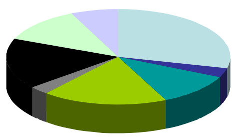
Combining assets into optimal portfolios

Assumptions
- Expected return for each asset
- Expected risk for each asset
- Correlation between assets

Optimal Portfolio



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Skill-Based Returns – "Alpha"

‘Alpha only’ investments

- Some investments are mostly aiming for alpha returns
  - Overlays
  - Absolute return funds
  - Hedge funds
- Defining characteristics
  - Leverage and shorting
  - Benchmarked against cash

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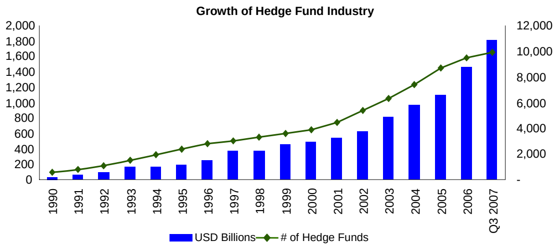
Hedge funds are becoming mainstream

A fund which seeks to use investment skills to generate pure added value



Source: BGI, HFR data

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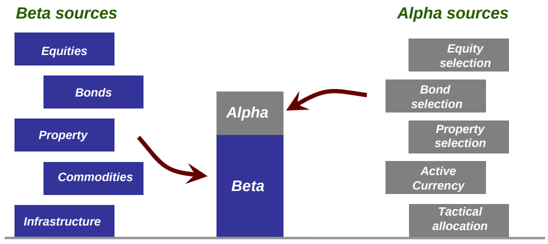
Introducing alpha to the portfolio



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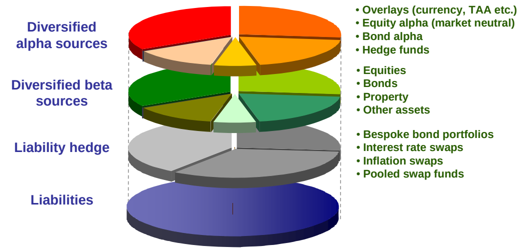
Putting it all together…



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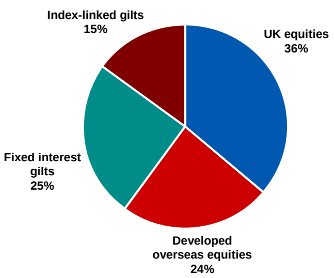
Case Study

A typical UK pension scheme



Assumptions

- No active management
- Assets of £100m

This example is provided for illustration only. It does not represent a current investment recommendation. Source: Barclays Global Investors.

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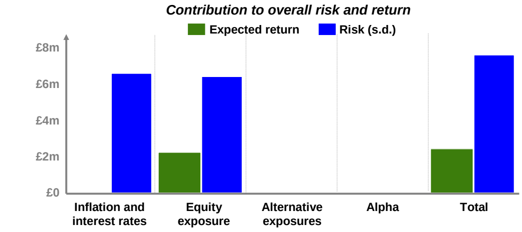
Sources of risk

Total risk is fairly evenly split between interest rate risk and risks associated with the return seeking assets



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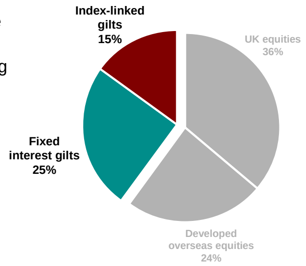
Interest rate and inflation risk

Risk-reducing assets

- 40% bonds - but liabilities are 100% bond-like
- Liabilities can be hedged using swaps
- Removes significant asset-liability mismatch (risk)

Current asset allocation



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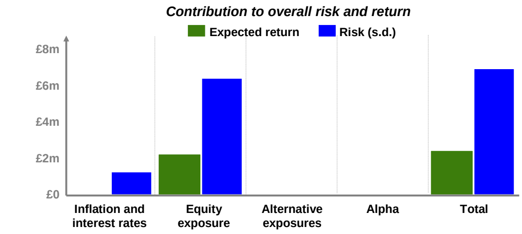
Impact of employing swaps



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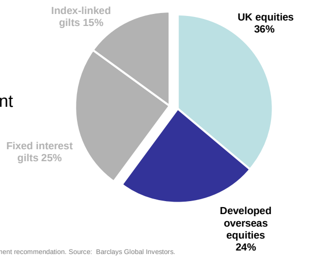
The growth assets

- Concentrated in equities – especially UK equities
- Risk not being turned into expected return in an efficient manner

Current asset allocation



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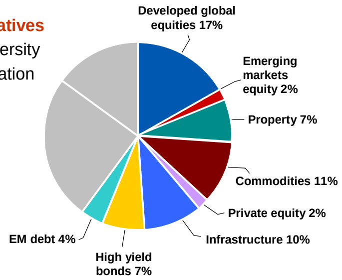
Diversification reduces risk of growth assets

Less equities, more alternatives

- Increased asset class diversity
- Reduced equity concentration



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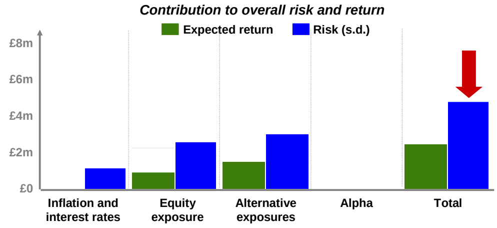
Diversification reduces risk of growth assets

- Returns come from equities and other markets
- Diversification reduces overall risk

Contribution to overall risk and return



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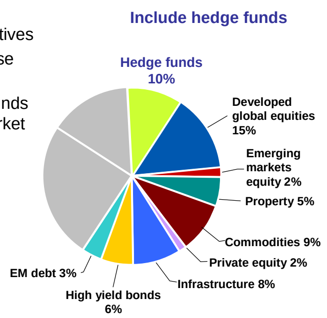
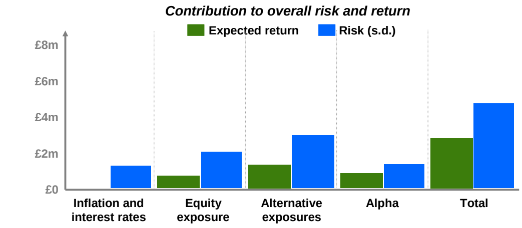
Include efficient active management

- Less equities, more alternatives
- Hedge funds further increase diversity in growth portfolio
- Carefully selected hedge funds may be uncorrelated to market returns
  - Increase expected return with very little increase in risk



Include efficient active management

- Returns come from market exposures *and* manager skill
- Returns increase with little change in risk



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Three steps to improve efficiency

	Expected Return (p.a.)	Expected Risk (p.a.)	Efficiency (Return / Risk)
Typical portfolio	Gilts + 2.3%	7.8%	0.3
With swaps	Gilts + 2.4%	6.6%	0.4
With diversified growth assets	Gilts + 2.4%	4.8%	0.5
With efficient active management	Gilts + 3.0%	4.8%	0.6

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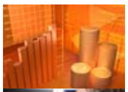
Too good to be true?



- More expensive management fees
- Higher trading costs
- More governance time required

But it's worth it

Questions?

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