

The problems with funding

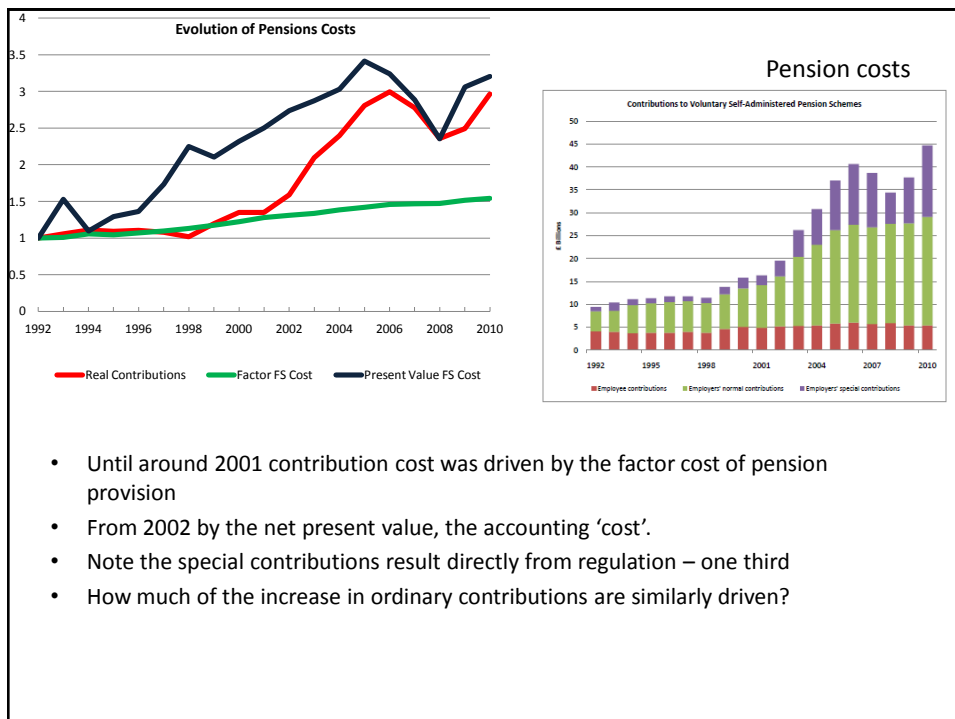
Con Keating
Momentum Conference
Manchester December 2011

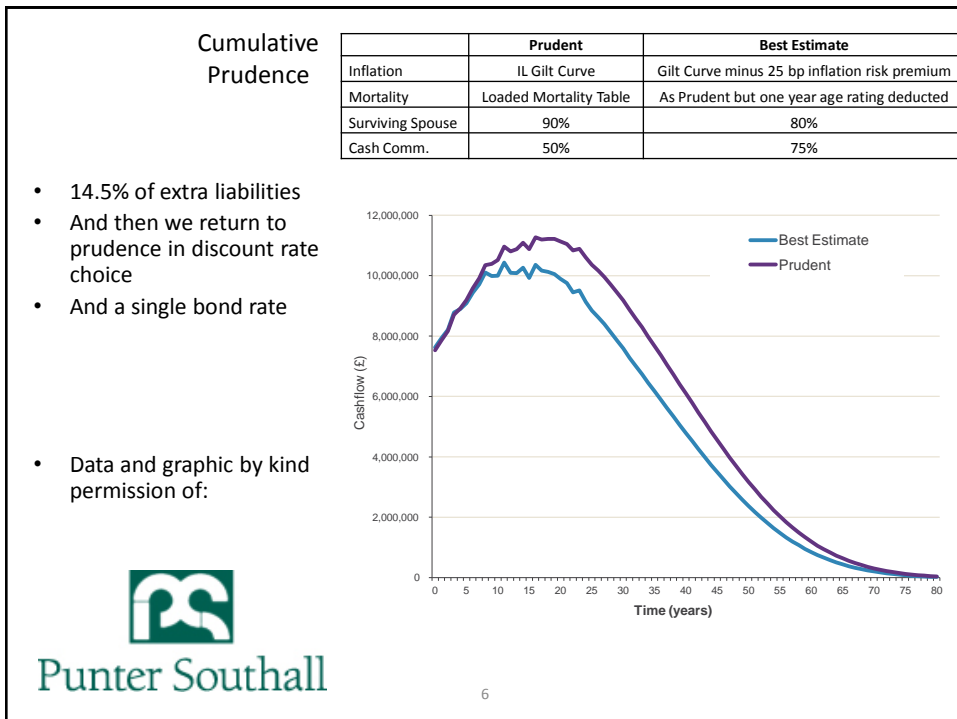
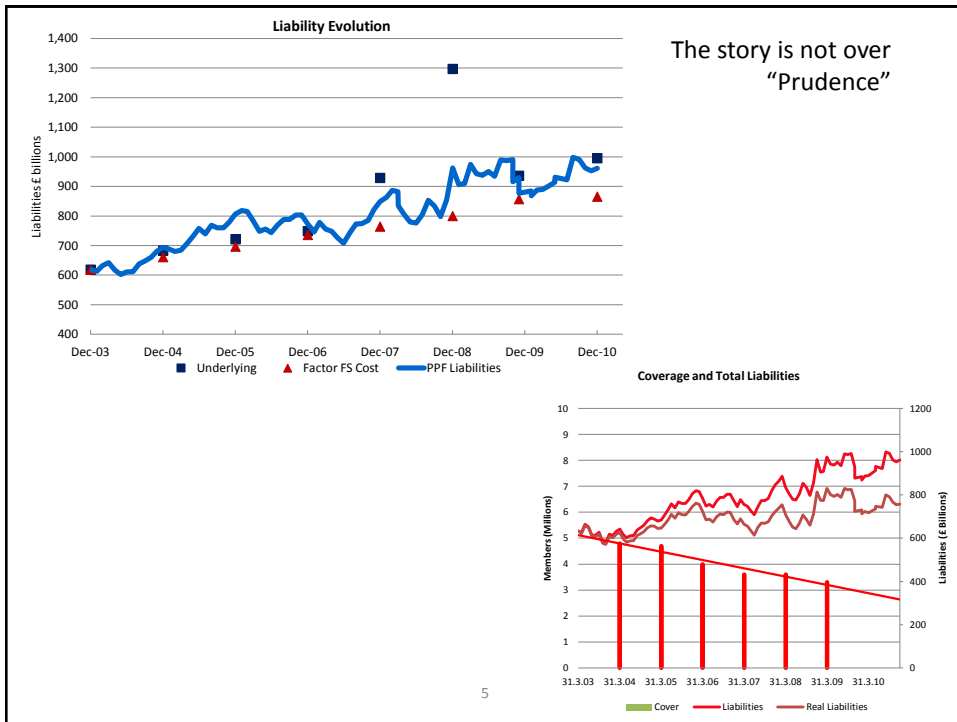
Mixed Attribute Accounting

- Assets are market prices and liabilities are net present values of estimated future cash flows discounted using a AA corporate bond rate
- Consider a pension perpetuity of £10 per annum
- And a fund endowed with £100 in current cash, with no future income or contributions
- Then it is obvious that this will run out of money in year ten and be unable to meet any further pension payments. This is equitable insolvency
- Suppose that interest rates are 10%, then the NPV of the perpetuity is £100
- The scheme is balance sheet solvent today – assets equal liabilities
- But not after payment of the current year's contribution – assets £90, liabilities £100
- Suppose that interest rates fall to 5%, with all else equal, the NPV liabilities rises to £200
- The scheme today now has a deficit of £100 or 50% of liabilities
- The underlying situation is unchanged, the fund is exhausted after ten years
- Even if funded at £200 it still is exhausted after 20 years
- And is balance sheet insolvent in the next period.
- Why hedge interest rates? – they are not a fundamental risk factor

Regulation

- Scheme funding regulations are based on this form of accounting and balance sheet solvency.
- A nuance – the market based interest rate is derived from a corporate bond
- Corporate bonds are traded on the basis of equitable insolvency
- The obligor must default, and fail to cure this, before acceleration can occur.
- The Merton 1974 credit model is of the balance sheet type – this reports the likelihood of insolvency at a future time as the likelihood that the projection of today's assets are lower than the projected liabilities. It overstates insolvency likelihoods
- Commercial applications have proprietary calibrations to account for this.
- Balance sheet insolvency occurs before equitable because it does not take account of subsequent refinancing or other actions
- The market would charge a higher interest rate for balance sheet insolvency than for equitable.
- Balance sheet insolvency is premature and wasteful for pensions and the economy.
- But it is the regulatory standard
- And forbearance, in the form of ten year deficit repair schedules, addresses only a minor part of the loss and waste.





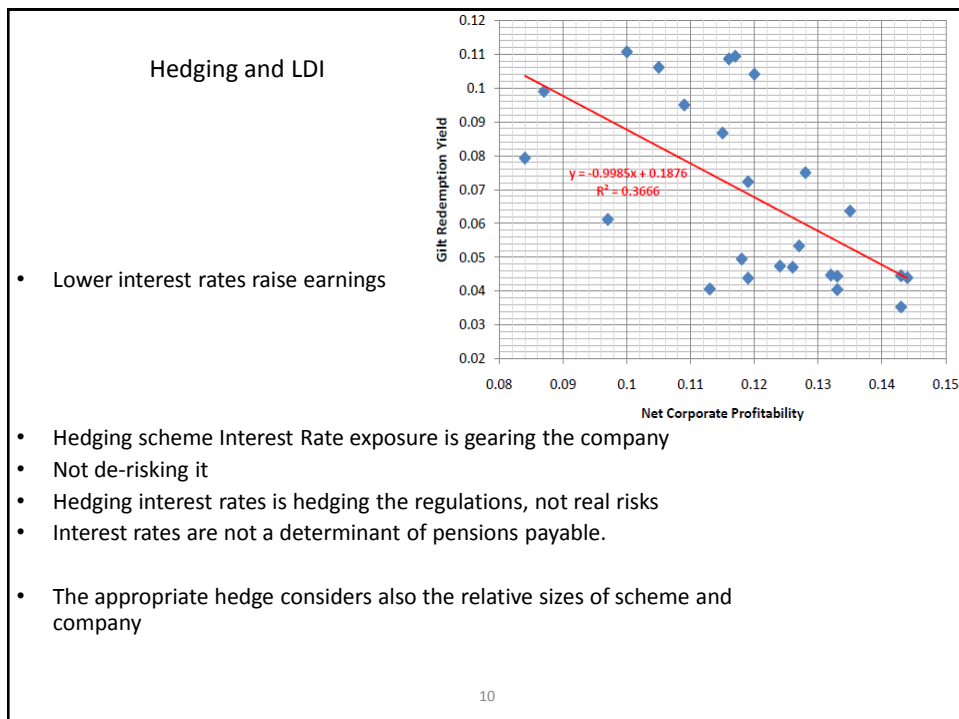
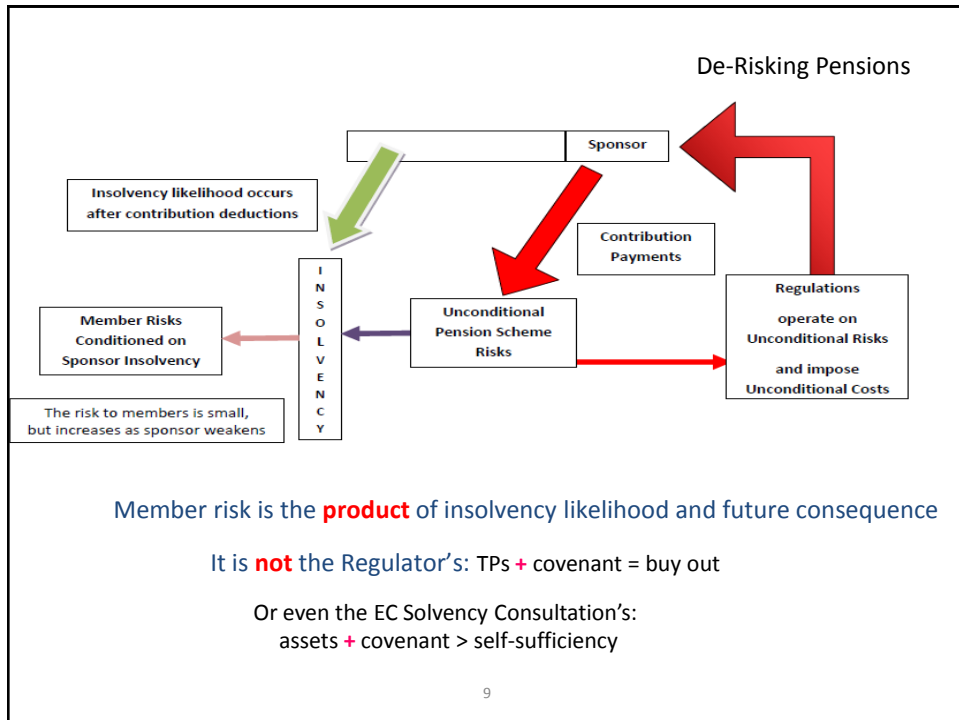
Why?

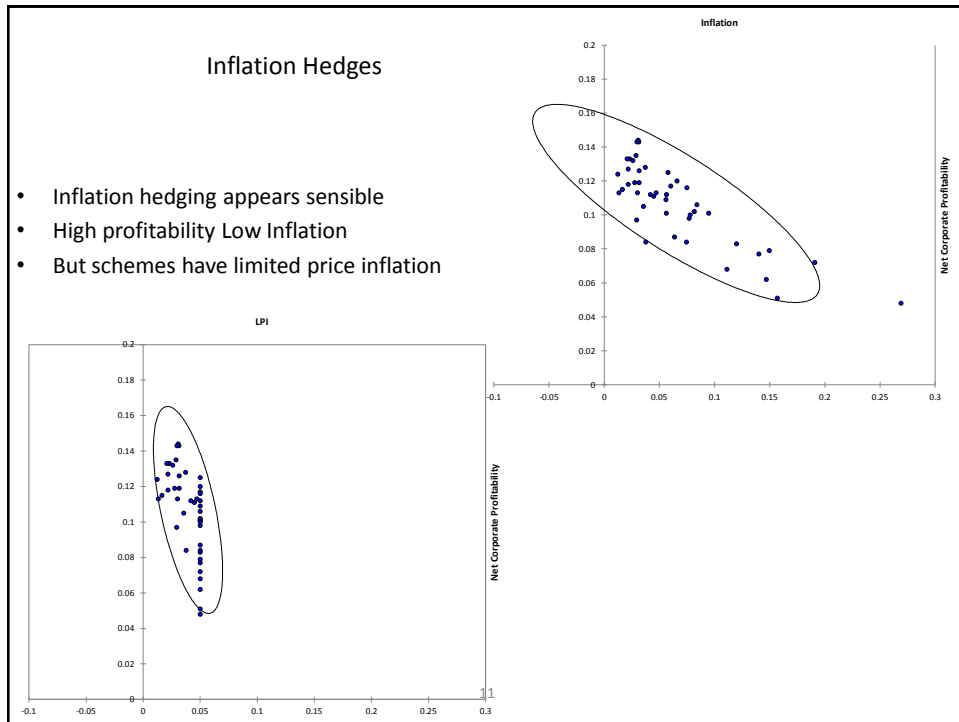
- Complexity
- Large number of control variables
- The concept of “prudence” has run riot
- Nudges
- Apparent costs have escalated beyond control
- One current illustration: BBC

| BBC | | £m |
|-----------------------------------|---|--------------|
| Surplus 2007 | | 275 |
| | Interest on Surplus | 52 |
| | Lower than assumed investment returns | -1044 |
| | Effect on liabilities of changes in market conditions | -793 |
| | Contributions lower than required | -5 |
| | Salary growth higher than assumed | -17 |
| | Membership profile different from assumed | 77 |
| | 2007 mortality to MC with 1% pa floor | -95 |
| | 2007 to 2010 post retirement discount rate | -241 |
| | Change early retirement terms | 271 |
| | Mortality Changes | |
| | base table | 128 |
| | allowance for future improvements | -125 |
| | Effect assumption salary increases RPI to 2015 | 140 |
| | Change in discount rate to allow for weaker covenant | -216 |
| | Salford reserve | -12 |
| Shortfall pre change | | -1605 |
| | Changes benefit structure | 474 |
| Shortfall post change 2010 | | -1131 |

An Illustration of “Prudence” at work

- The BBC trustees had a covenant review conducted
- This found that the covenant deteriorated from “strong” to “tending to strong”
- This is equivalent to about a 10 basis point increase in the insolvency likelihood of the BBC
- The Trustees therefore lowered the discount rate used to evaluate liabilities by 18 basis points
- On a stand alone basis this amounts to an increase in liabilities of £296 million – note: this is not the £216 million of their attribution analysis
- Let us suppose the deficit is actually £1 billion, then the true increase in risk is £1 million
- But the Dun & Bradstreet score never varied from 100
- Prudence is not biased, reckless conservatism but rational and well-informed behaviour.



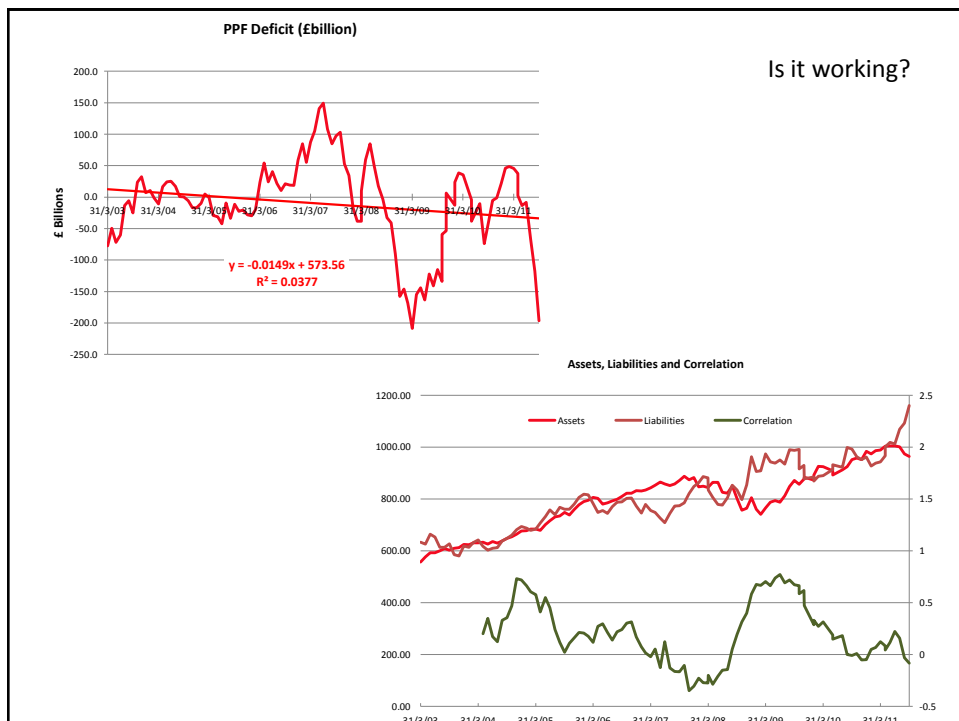
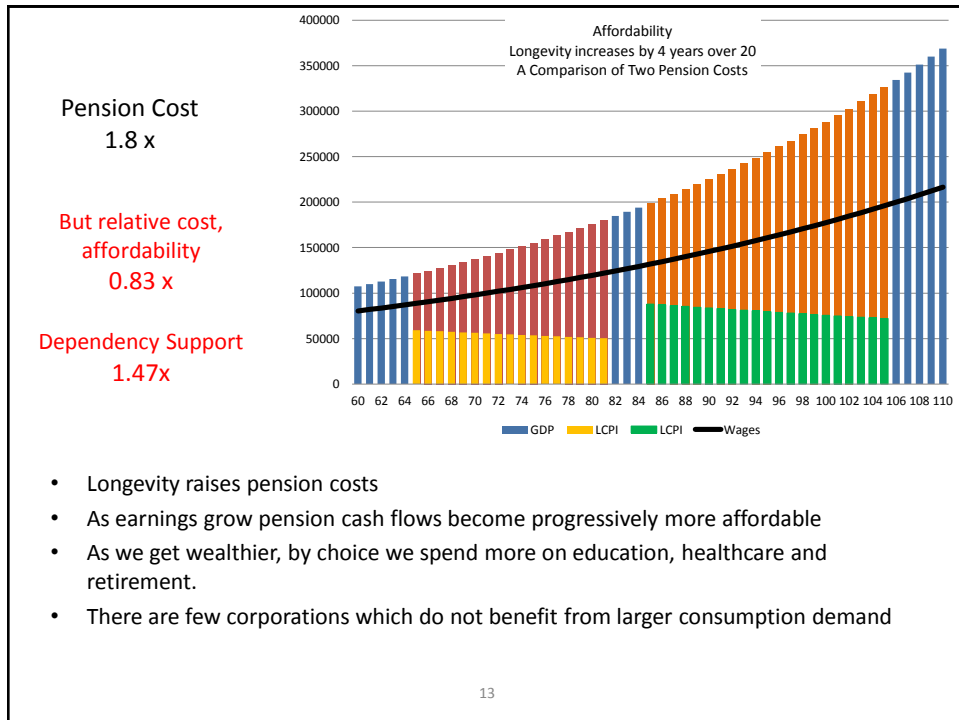


Joint Hedging

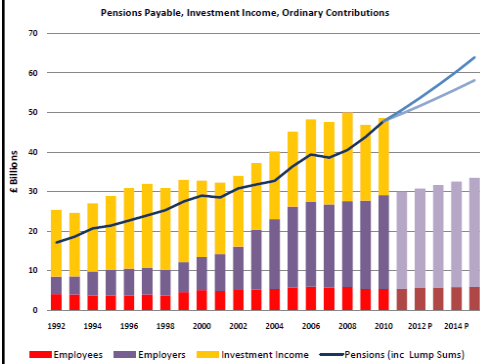
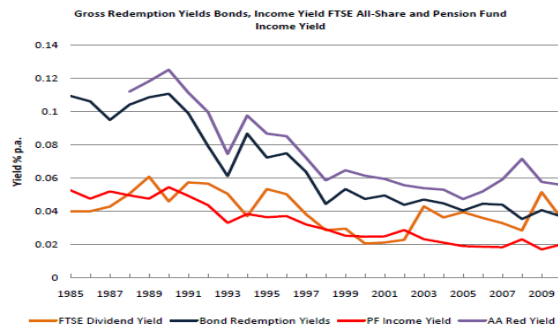
- Hedging both interest rate and inflation exposure in both broad and LPI form
- Multicollinear
- So use partial least squares – not OLS
- We should write, not hedge LPI !!

| Corp Profits | OLS | PLS 1 | PLS2 |
|----------------|-------|-------|-------|
| Gilt Yields | -0.71 | -0.38 | -0.84 |
| Inflation | | -0.2 | |
| LPI | | | 0.42 |
| R ² | 78% | 80% | 63% |

| | Net Corporate Profitability | Inflation | Gilt Yield | LPI |
|-----------------------------|-----------------------------|-----------|------------|--------|
| Net Corporate Profitability | 1 | -0.830 | 0.889 | -0.591 |
| Inflation | -0.830 | 1 | 0.819 | 0.662 |
| Gilt Yield | -0.889 | 0.819 | 1 | 0.767 |
| LPI | -0.591 | 0.662 | 0.767 | 1 |



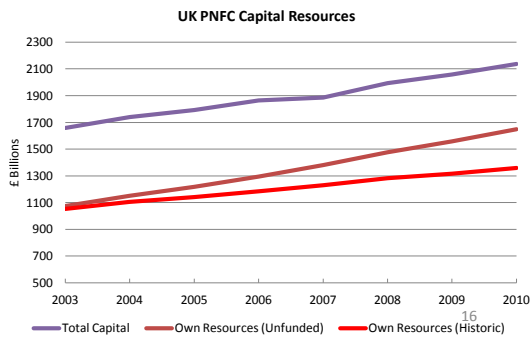
Effects



What chance the
long term?

Is there harm?

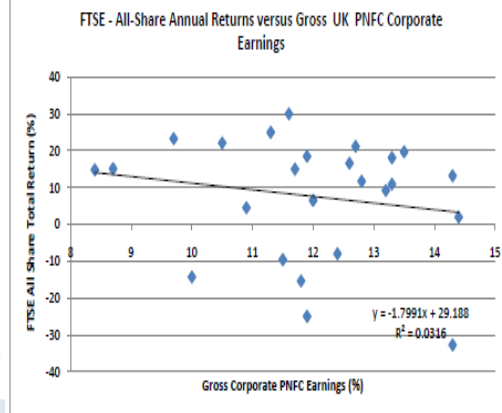
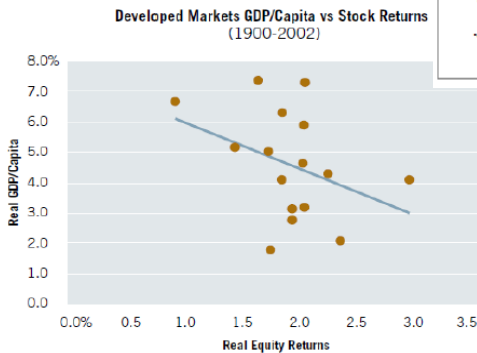
| | Contributions | | | Relative Liability Cover | | | |
|------|----------------|----------|--|--------------------------|----------|----------------|----------|
| | Earnings Cover | | | PPF | | Factor FS Cost | |
| | Historic | Unfunded | | Historic | Unfunded | Historic | Unfunded |
| 2003 | 5.98 | 6.10 | | 1.70 | 1.75 | 1.70 | 1.75 |
| 2004 | 5.77 | 6.02 | | 1.59 | 1.68 | 1.67 | 1.76 |
| 2005 | 5.12 | 5.48 | | 1.42 | 1.54 | 1.64 | 1.78 |
| 2006 | 5.17 | 5.72 | | 1.53 | 1.73 | 1.61 | 1.82 |
| 2007 | 5.63 | 6.42 | | 1.45 | 1.69 | 1.61 | 1.88 |
| 2008 | 6.06 | 7.09 | | 1.33 | 1.61 | 1.60 | 1.93 |
| 2009 | 4.94 | 5.93 | | 1.50 | 1.88 | 1.54 | 1.92 |
| 2010 | 4.57 | 5.62 | | 1.41 | 1.83 | 1.57 | 2.03 |



Markets and Earnings

Financial Market returns are negatively related to growth

Financial market returns are unrelated to corporate earnings



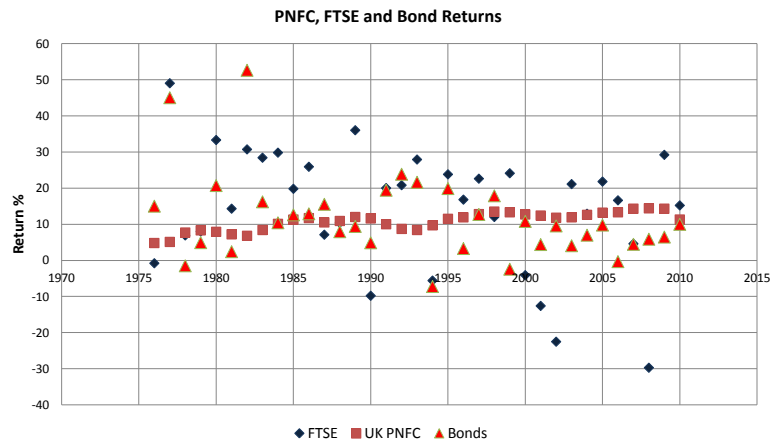
And an order of magnitude more volatile

Funding imports that volatility to the balance sheet through the accounting standards

Funding

- The sole risk faced by a scheme member is sponsor insolvency
- If fully funded at sponsor insolvency, there is a fifty percent likelihood that the scheme will fail before all pensions have been discharged.
- The section 75 value applies – 130-150%
- Buy-out with an insurance company
- If we overfund who owns the excess?
- And when can they realise any surplus?
- If we overfund, how much should we overfund ex ante?
- All of these issues disappear with pension indemnity assurance

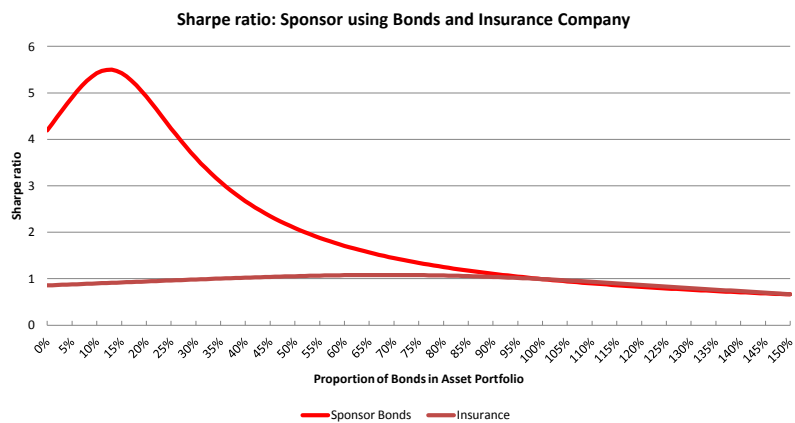
That FTSE / Bond / Private Sector Relation



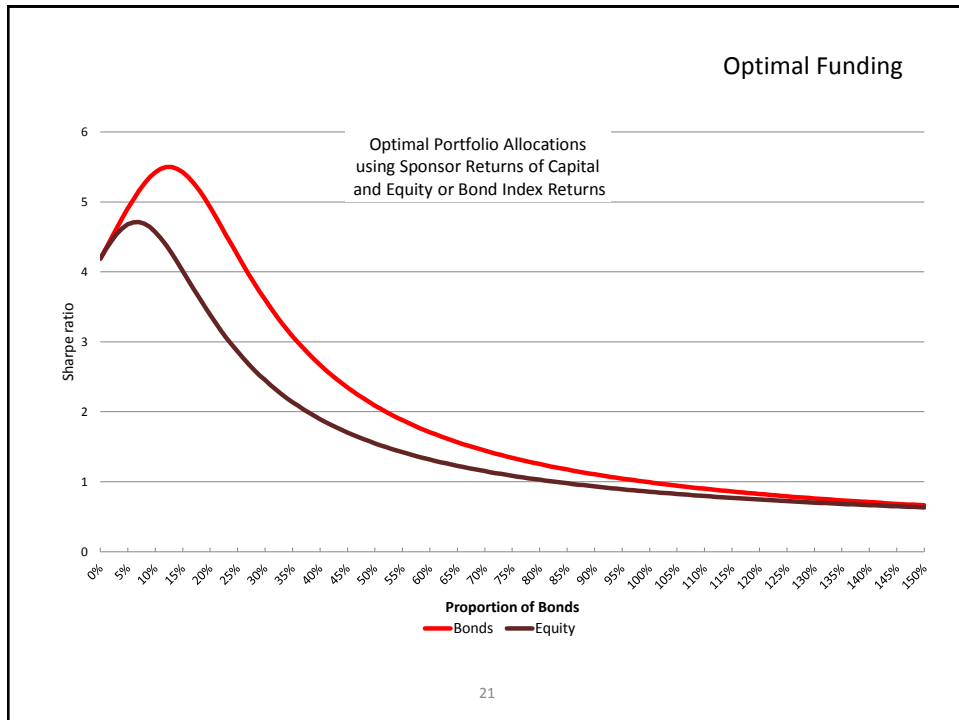
This is one reason why we should not apply Solvency II to UK Pensions

19

Insurer vs Producer Sponsor



20



Dumb Ideas

Employer-sponsored schemes should be 100% funded

Self-Investment should be restricted to 5% or 10% Group

Solvency II should be applied to UK pension schemes

There should be a "level" playing field between Insurers and private sector DB schemes

| | | Optimal | Risk Buffer- 2 SD |
|------------------|---------------|------------|-------------------|
| Sponsor | Bonds | 13% | 4.0% |
| | Equity | 7% | 4.7% |
| Insurance | Bonds | 68% | 23.2% |

22

Why do we care, reality will prevail

- Ordinarily we would not care about overfunding because over time reality will prevail
- But that argument assumes that no interim actions were taken
- And sunk cost expenses were not incurred
- And financing of pension funding is costless
- This is far from the case
- One aspect of this is “hedging”
- That is speculation rather than investment
- And speculation has an expected return of zero
- In seeking to avoid volatility in its investments, a scheme is feeding market volatility
- And as that dominates, so we erode trust in markets
- And the dynamic becomes entirely different.

23

Ending.....Seatbelts and Brakes

- Alan Rubenstein – CEO, PPF
- **Funding trumps Covenant**
- Rephrased:
- **Seatbelts trump Brakes**
- Funding is a mistake
- That Regulation and Accounting magnify
- To an incredible degree
- This is how we killed the UK occupational funded DB system
- DB is much more efficient than DC
- Member security is best assured, not partially collateralised
- **So unfunded insured DB is the design of the future**
- And it costs between 10% and 20% of wages for 2/3 final salary
- With no tax costs unlike funded DB and DC

24

