The Actuarial Profession
making financial sense of the future

Current issues in pensions
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Measuring investment risk in the PPF Levy

22 November 2011

Investment risk in the PPF levy – a brief history

2005 – PA2004 allows inclusion of investment risk

2006 – Risk-based levy introduced. No investment risk

2008 – Consultation introduces 5 options for investment risk

2009 – Steering Group and Technical Reference Group formed

2010 – First consultation

2011 – Second consultation

2011 – Draft determination

Consultation with stakeholders

The PPF has encouraged engagement with the industry

- Consultations since 2008
- Steering Group set up in Autumn 2009
  - Senior industry group
  - Simplicity, predictability, equity, promotion of good behaviour
- Technical Reference Group
  - Technical experts to support Steering Group
  - Practical issues of formula design

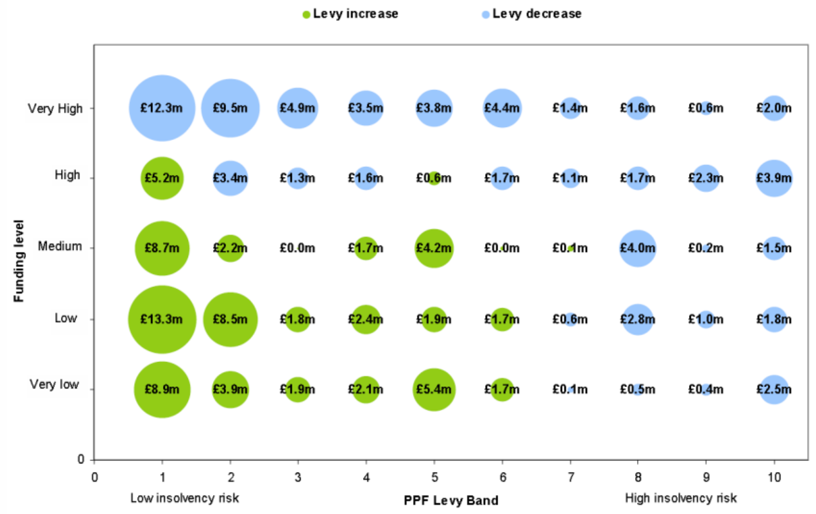
The new levy framework from 2012/13

Policy statement

- "Bottom-up"... with constraints
- Levy parameters fixed for three years... except in extremes
- Smoothing of assets and liabilities over five years
- Underfunding will reflect investment risk
- Number of insolvency bands reduced to 10

Consultation on 2012/13 levy Determination closed on
2 November 2011

Redistribution of levy
Estimated change in levy for 2011/12



Source: A New Framework: Policy Statement, PPF, May 2011

How will investment stress tests be incorporated?

Two approaches

	Standard	Bespoke
Who?	All schemes	• Those with over £1.5bn of s179 liabilities • By choice
Asset stress	Calculated by PPF	Calculated by Scheme
s179 liability stress	Calculated by PPF	Calculated by PPF
Data on Exchange	No additional requirements	Submit stressed and unstressed asset values

Exchange “help file” has been updated to help schemes classify assets

How are the stress tests calculated?

Overview of Redington methodology

- Risk factor approach – based on data available on Exchange
- Using historic data from 1 April 2006 to 31 March 2011
- Each scheme modelled individually
- Stresses calculated in order to replicate an aggregate stress that is equivalent to 1× volatility of the aggregate funding level

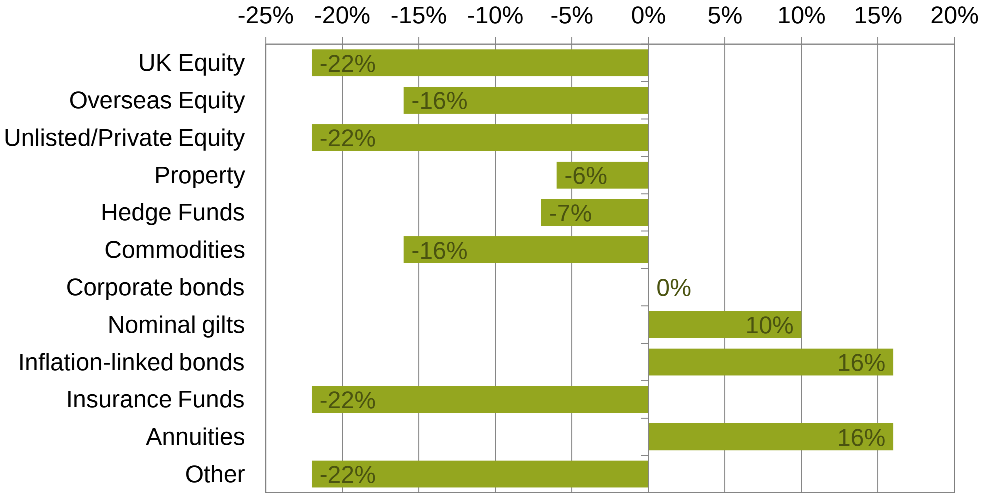
The risk factor stress tests

- Risk factors restricted to data available on Exchange

Risk factor	Unit of stress	Risk factor stress
UK Equity	%	-22%
Overseas Equity	%	-16%
Property	%	-6%
Commodities	%	-16%
Hedge Funds	%	-7%
Credit spread	basis points	49
Interest rates	basis points	-61
Inflation	basis points	34

s179 liability assumptions stressed by relevant interest rate and/or inflation stress

The standard asset stress tests: Applied to asset categories on Exchange



The standard asset stress tests: Considerations and feedback

- Applicable without additional input from schemes
- Limitations of Exchange data
- Choice of benchmarks
- Diversification – full correlation matrix approach
- Currency hedging
- The effective “real rate” stress
- Treatment of “insurance funds”
- Treatment of annuities
- “Other” category

The bespoke asset stress tests

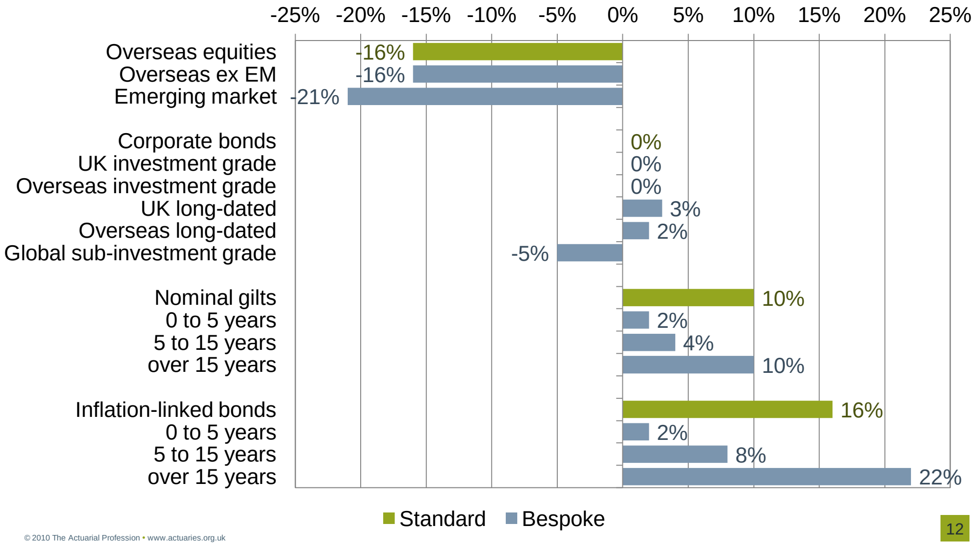
Two stages

1. More refined asset stress test benchmarks
2. Risk factor stress tests to be applied to derivative contracts

The bespoke asset stress tests
Stage 1 – more refined asset stress test benchmarks

Asset class	Standard	Bespoke
Equities	• Overseas	• Overseas (ex Emerging markets) • Emerging markets
Corporate bonds	• UK investment grade	• UK investment grade • Overseas investment grade • UK long-dated investment grade • Overseas long-dated investment grade • Global sub-investment grade
Nominal gilts	• Over 15 years	• 0 to 5 years • 5 to 15 years • Over 15 years
Inflation-linked bonds	• Over 5 years	• 0 to 5 years • 5 to 15 years • Over 15 years

The bespoke asset stress tests
Stage 1 – more refined asset stress test benchmarks



The bespoke asset stress tests
Stage 2 – risk factor stress tests for derivatives

- Bespoke guidance issued including examples
- Equity derivatives
  - options, futures, total return swaps
- Interest rate derivatives
  - swaps, gilt repos, gilt total return swaps, swaptions
- Inflation derivatives
  - swaps

The bespoke asset stress tests: Considerations and feedback

- Level of granularity
- Data that is readily available
- Consultant support
- Certification
- Special purpose vehicles
- Trigger-based strategies

Why choose the bespoke approach?

- Refined stresses are better reflection of benchmarks
- Longer-dated bond benchmarks
- “LDI”
- Equity protection
- Size of scheme does not necessarily reflect complexity of investment strategy

Note: Must do both stages 1 and 2 if adopting the bespoke approach