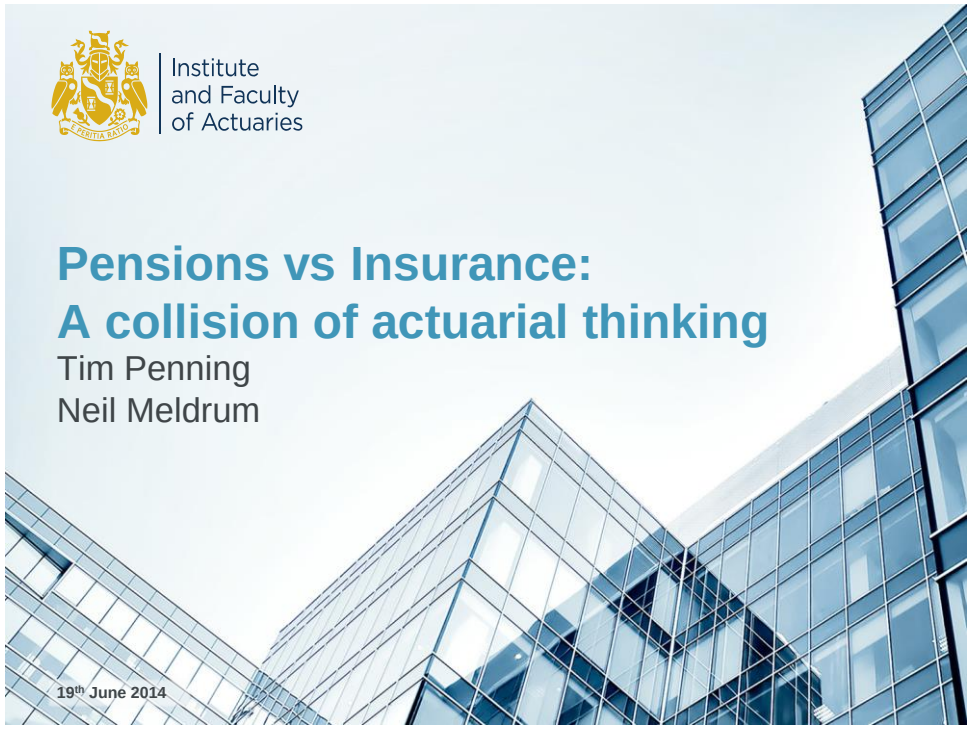

Agenda

- Introduction
- Contrasting pensions and insurance thinking
- Insurer's risk framework
- "Real life" examples
- Consequences of differences in approach
- Justification?
- Conclusion

Introduction

"A general observation is that actuaries in banking, insurance and pensions each operate in a different risk space"
Actuaries and Discount Rates,
C. Patel and C. D. Daykin, May 2010

"Pension Funds have an advantage over Life Funds in so far as they are not under a statutory obligation to show each year a state of complete solvency based on market values"
Pension Fund Investments,
George Ross Goobey, October 1954

"There therefore appears to be some inconsistency between the measurement of technical provisions of an insurer's annuity book and the measurement of its own staff pension obligations."
Actuaries and Discount Rates,
C. Patel and C. D. Daykin, May 2010

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Contrasting pensions and insurance

	Pension Scheme Cash funding	Insurance Solvency Requirements (ICAS Regime / Solvency II)
Main features	• Market value of assets compared to "Technical Provisions" • Used to determine cash contribution payments from the sponsoring firm • Shortfalls are permissible and can be corrected over a period	• Market value of assets compared to liabilities plus capital requirement • Shortfalls not permissible – instigates regulatory action
Actuarial assumptions	• Technical Provisions set "prudently" - typically 60%-75% confidence level • Discount rate based on prudent asset return assumption • Commonly set as long-term gilt yield + x% risk premium	• Liability cashflows are best estimate. Solvency II includes a risk margin (cost of capital) within technical provisions. • Move towards basing discount rate on risk free returns with no reference to asset allocation
Key points	• Asset growth credited up front • Higher risk supports lower funding requirement • No capital requirement	• No advance credit for asset growth • Higher risk leads to greater allowances for risk • Explicit capital requirement

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Typical risk framework for an insurer

Risk Strategy / Philosophy

Philosophy	Strategy	Preferences
How do we think about risk & value ?	Which risks do we want to take on in medium term?	Which risks do we prefer to take given expected returns, etc ?

Risk Appetite

- Risk Appetite

Insurer articulates their appetite for each risk type.

- Risk Limits

Set limits for each risk; broken down by business unit / legal entity.

Capital Management

- Hold available capital to cover required capital plus an operational buffer.
- Allocate risk capital by risk type

Performance Management

- Economic Value & IRR

(*Risk adjusted profit measures used to assess merits of competing opportunities)*

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Example: Non-profit deferred annuity

	Pensions 100% gilts
Assets	120
Liabilities	100
Capital requirement	0
Liabilities + CR	100
Surplus/(shortfall)	**20**

	Insurance 100% gilts
Assets	120
Liabilities	100
Capital requirement	20
Liabilities + CR	120
Surplus/(shortfall)	**0**

Risk based capital requirement calculated by stressing balance sheet to all relevant material (and quantifiable) risks.

Insurance Risk Based Capital	Capital Requirement
Market risk (equity, interest rate, etc)	8
Credit risk	0
Insurance risk	11
Operational Risk	4
Diversification (of risks)	**(3)**
Capital Requirement	**20**

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Example: Non-Profit Deferred Annuity
Change to investing 100% in equities

Pensions	100% equities	Change
Assets	120	-
Liabilities	80	(20)
Capital requirement	0	-
Liabilities + CR	80	(20)
Surplus/(shortfall)	**40**	+20

Insurance	100% equities	Change
Assets	120	-
Liabilities	100	-
Capital requirement	80	+60
Liabilities + CR	180	+60
Surplus/(shortfall)	**(60)**	(60)

Pensions: Discount rate increased.

Insurance: Liability valuation unaffected (risk free rates used). However, reflecting material market risks introduced, large capital requirements needed.

Insurance Risk Based Capital	Cap Req'mnt	Change
Market (equity, interest rate,etc)	70	+62
Credit risk	0	-
Insurance risk	11	-
Operational Risk	4	-
Diversification (of risks)	**(5)**	**(2)**
Capital Requirement	**80**	**+60**

Does cost of capital exceed the equity risk premium you would hope to earn?

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Outcome of example

- Pension scheme sponsor is incentivised to push for investment in equities to earn ***the equity risk premium …..***
- *… which reduces* ***the expected cost to the employer.***

- Insurer ***could also invest in equities*** to earn the equity risk premium….
- ….but this ***introduces balance sheet volatility*** which the insurer must be able to withstand…..
- …..and so has to put up ***capital to cover this risk /*** uncertainty***.***
- Insurer therefore incentivised to manage / restrict risk by matching assets and liabilities closely. In this case, investing in gilts (of sufficient duration to match the liabilities if possible) is likely to be optimal from a stability of solvency position perspective…..

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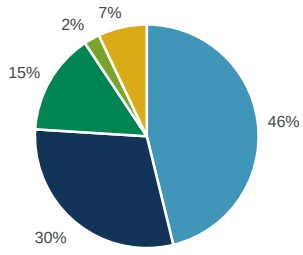
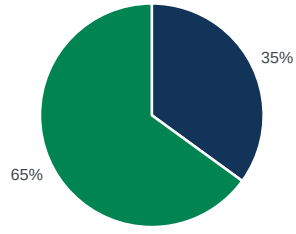
Differences in practice – asset allocation

Average pension scheme investment



Typical deferred annuity investment



Equities Gilts Corporates Insurance policies Cash and deposits

Sources: Purple Book: DB Pensions Universe Risk Profile 2013 and LBG

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Example: Non-Profit Deferred Annuity Reinsurance / Buy-in

Pensions	Buy-in	Change
Assets	120	-
Liabilities	120	+20
Capital requirement	0	-
Liabilities + CR	120	+20
Surplus/(shortfall)	**0**	**(20)**

Insurance	Reinsurance	Change
Assets	120	-
Liabilities	120	+20
Capital requirement	6	(14)
Liabilities + CR	126	+6
Surplus/(shortfall)	**(6)**	**(6)**

Pensions: Assets and liabilities now matched.

Insurance: Assets and liabilities now matched. Majority of risks passed to reinsurer so capital requirement reduces. However, have now introduced counter-party risk.

Insurance Risk Based Capital	Cap Req'mnt	Change
Market (equity, interest rate,etc)	0	(8)
Credit risk	0	-
Insurance risk	0	(11)
Operational Risk	4	-
Counterparty Risk	3	3
Diversification (of risks)	**(1)**	**2**
Capital Requirement	**6**	**(14)**

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Outcome of example

- Insurer will weigh up the benefits of reduced capital requirements and stability of balance sheet verses the cost of reinsurance.
- The ***explicit risk allowance*** makes a buy-in/reinsurance look relatively more attractive to the insurer than the pension scheme...
- ...again, a ***well advised*** pension scheme would factor risk reduction into its decision...
- ...but there is the risk that decisions are driven by what is visible (funding or accounting balance sheet) and not the whole picture

Differences in practice – funding

"... The more dependent the valuation becomes on anticipations of the future...the more vulnerable it becomes to possible miscalculation and serious error...."
Benjamin Graham

Since 2006 pension schemes have been ~ 20 times more likely to need support from a statutory safety net

Sources: FSCS, PPF and ABI

Average DB pension scheme cash funding ratio: 95%

Average DB pension scheme 'buy-out' ratio: 59%

Source: The Pensions Regulator: Scheme Funding, June 2013

Average UK insurer capital coverage: 170%

Solvency II for pensions would add £150BN to deficits

Source: KPMG analysis of FSA returns 2012 & EIOPA

Are the differences justified?

	Pension Scheme		Insurer	
	Detail	**Implications for funding**	**Detail**	**Implications for funding**
Additional funding	Recourse to sponsor	Can take a longer term view	Raise capital in markets	Costly or not available in times of most need
Accounting treatment	Fluctuations don't appear in P&L	Less corporate focus on risk / more appetite for risk	Fluctuations impact P&L	More focus on risk / more risk averse
Treatment of surplus	Difficult to get back	Don't overfund	Easy to get back	Overfunding ok
Systemic impact	Arguably less systemic impact	Less political focus on ensuring solvency	Integral part of financial system	Political focus on ensuring solvency
Accountability	Trustees accountable to (typically disengaged?) members	Less pressure to minimise losses	Insurer accountable to shareholders	High level of scrutiny of performance leads to more focus on risk

Conclusion

- Contrasting regimes drive different behaviours
- These two regimes are coming together through increased bulk annuity transactions and insurers with their own DB schemes...
- ...and may continue to collide if SII for pensions comes to fruition
- As a profession, we may therefore find that the historically separate practices come closer together

Questions

Comments

Expressions of individual views by members of the Institute and Faculty of Actuaries and its staff are encouraged.

The views expressed in this presentation are those of the presenters.

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