The Actuarial Profession
making financial sense of the future

Is there a place in the UK mass market for a guaranteed pensions product?

Investment Products for

Retirement Savings Working Party

Agenda

- What do people want? Is this the same as what they need?
- Existing pension systems
- Different ways of providing guarantees
- Comparison of approaches
- Conclusions

1

The Actuarial Profession
making financial sense of the future

What do people want? Is this the same as what they need?

Key Wants and Needs - Individuals

Wants

- Maximise annual pension income
- No unexpected sudden losses in pre-retirement phase
- Low, transparent fees
- Simplicity and transparency
- Minimum involvement

Needs

- Annual pension income that provides a certain lifestyle
- Certainty of fund at retirement
- Good value solution
- Effectiveness
- Portability

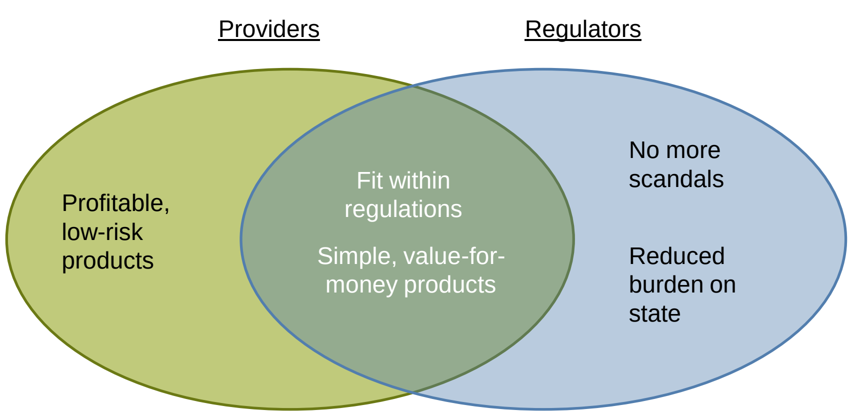
3

Key Wants and Needs - Employers

- Value for Money
- Flexibility
- Low governance and communication needs
- Attractive to employees
- Fits regulations

4

Key Wants and Needs - Providers/ Regulators



5

DWP guidance for a DC default option offering

- Department for Work and Pensions published Guidance for offering a default option for DC automatic enrolment pension schemes in May 2011
  - Simple, easy-to-explain, high-level objective of offering
  - Take account of the likely characteristics and needs of employees who will be automatically enrolled
  - Appropriately and competitively priced
  - Investment strategy should reflect the overall objective of the default option and the balance between risk and the potential for growth

What do others do?

What do others do? – Employee/Employer provision

8

What do others do? – Are these influencing factors valid?

- A genuine difference in risk aversion of mass market by country
  - Driven by historic pensions structures
  - More fundamental
- Government's political philosophy
  - Belief in Government intervention/fewer rules
  - Need to close savings gap, reputational worries
- Suppliers' influence
  - Eliminate potential for reputational risk of mistakes
    - Introduces reputational risk of not putting customer first?
    - If they've chosen something they can't blame us
  - Uncomfortable nudging mass market to what they need rather than want
    - Is it our place to opine on what they need?
  - Influenced by own (HNW?) attitudes to risk and return

9

Conclusions of this background research

- Ideally, guarantee would refer to a level of real retirement income for life
  - However, this is too expensive and too risky to provide
- Looking around the world, there appears to be two camps
  - No guarantees
  - Retirement pot guarantees (either 0% or linked to bond levels)
  - Based on UK history, the 0% guarantee seems to be the best fit
- A principal-protection guarantee appears to be "wanted" and could encourage saving which may be the biggest driver of change
  - Can such guarantees be provided and by whom?
  - Can modern techniques reduce the risk without the need for a guarantee?

10

The Actuarial Profession
making financial sense of the future

Methods of providing guarantees

Methods of providing guarantees

- Investment strategies to reduce volatility
  - Low equity proportion
  - Lifestyling
  - CPPI
  - Volatility targeting
  - Investor owns hedge assets

NOTE – THESE STRATEGIES ARE NOT GUARANTEES

12

Methods of providing guarantees - lifestyling

- Initial high % in risky assets reduces as retirement approaches
- Rationale
  - Chance to grow, or recover from an early fall
  - Avoid fall in value close to retirement, bonds better match annuity rates
- But..
  - Investment risk still with saver
  - Wide spread of potential returns

13

Methods of providing guarantees - CPPI

- % in risky assets depends on:
  - the level the guarantee is in-the-money, and;
  - the assumed maximum daily crash
- Rationale
  - Will hit guarantee, unless daily performance is worse than the assumption
- But..
  - Monetisation problem – risky assets crash and the CPPI mechanism invests virtually whole fund in low yielding assets, but with relatively high charges

14

Methods of providing guarantees - volatility targets

- % in risky assets depends on;
  - A target level of volatility, and;
  - short term realised volatility of the risky assets, and the non-risky assets
- Rationale
  - Historical evidence implies it's good to be underweight in an asset when it is volatile, and recent volatility is a good indicator of future volatility.
- But..
  - In the future the rationale may not hold true.

15

Methods of providing guarantees – cost of guarantee

- Floor promised for retirement payout
  - Cost to guarantor lower when investor assets are less volatile
    - Hence use lifestyling, CPPI, volatility targeting etc. for investor assets
  - Ultimate party taking residual risk of providing guarantee has to either:
    - Accept it, or;
    - Dynamically hedge it
  - Cost to guarantor lower if hedges effective
    - Also puts limits on product design

NOW STRATEGIES ARE GUARANTEED

16

Methods of providing guarantees – other charges

- For manufacturers of guarantees there are two big issues:
  - Do total charges cancel out expected return?
  - Can volumes make manufacture worth while?

- High charges on retail guarantee contracts cause drag on the fund
  - Sold through IFAs (why?)
  - Charge for advice, most of which is for finding customers
  - Wide choice of active funds with high charges, not hedgeable

- A default guarantee fund can avoid these by providing
  - Volume without such high advice charges
  - Hedge friendly passive investment strategy with low amc

17

The Actuarial Profession
making financial sense of the future

Comparison of approaches

Stochastic Analysis of Various Approaches

- Built a model with stochastic equity price movements and deterministic risk-free rates
  - Risk-free returns = 3%
  - Equity Risk Premium = 3%
  - Equity Volatility = 20%

- Compared the following approaches and charging structures for a single premium, 20y investment:
  - Traditional lifestyling, no guarantee, 20bps AMC
  - CPPI with money-back guarantee, 50bps AMC plus 50bps gtee charge
  - 50/50 equities/risk-free UL, no guarantee, 20bps AMC
  - 12% Vol target approach, no guarantee, 50bps AMC
  - Variable VT approach (7% for 5y, 11% for 5-15y, 4% for 15-20y), no guarantee, 50bps AMC
  - 50/50 UL with money-back guarantee, 20bps AMC plus 100bps gtee charge
  - 12% Vol target approach with money-back guarantee, 50bps AMC plus 100bps gtee charge

19

Stochastic Analysis of Various Approaches

Base scenario

Scenario	Lifestyle	CPPI	Unit-linked no guarantee	Vol Target no guarantee	Variable Vol Target with no guarantee	Unit-linked with guarantee	Vol Target with guarantee
Best	14.0%	15.3%	9.9%	10.4%	8.1%	8.9%	9.4%
75th percentile	6.2%	5.7%	5.4%	5.3%	4.2%	4.4%	4.3%
Average	4.9%	4.7%	4.3%	4.2%	3.4%	3.4%	3.3%
Median	3.7%	0.1%	3.9%	3.7%	3.2%	2.9%	2.7%
25th percentile	1.2%	0%	2.2%	1.9%	2.1%	1.2%	0.9%
Worst	-12.0%	0%	-5.7%	-5.9%	-5.0%	0.0%	0%
P(loss)	17.4%	0%	5.8%	8.1%	2.7%	0%	0%
P(beating risk-free)	60%	39%	64%	60%	53%	48%	44%

Highest upside potential

Significant downside tail risk

Median returns lower than risk-free

Source: SG Advisory May 2012. The objective of this table is to present the products' mechanism. Figures and prices in this example have an indicative value, and cannot be considered as a guarantee of future performance and do not constitute in any manner a firm price offer from Société Générale.

Stochastic Analysis of Various Approaches

Unit-linked and Vol Target guarantee charges reduced to 50bps

Scenario	Lifestyle	CPPI	Unit-linked no guarantee	Vol Target no guarantee	Variable Vol Target with no guarantee	Unit-linked with guarantee	Vol Target with guarantee
Best	14.0%	15.3%	9.9%	10.4%	8.1%	9.4%	9.9%
75th percentile	6.2%	5.7%	5.4%	5.3%	4.2%	4.9%	4.8%
Average	4.9%	4.7%	4.3%	4.2%	3.4%	3.9%	3.8%
Median	3.7%	0.1%	3.9%	3.7%	3.2%	3.4%	3.2%
25th percentile	1.2%	0%	2.2%	1.9%	2.1%	1.7%	1.4%
Worst	-12.0%	0%	-5.7%	-5.9%	-5.0%	0.0%	0%
P(loss)	17.4%	0%	5.8%	8.1%	2.7%	0%	0%
P(beating risk-free)	60%	39%	64%	60%	53%	57%	52%

Highest upside potential

Significant downside tail risk

Median returns lower than risk-free

Source: SG Advisory May 2012. The objective of this table is to present the products' mechanism. Figures and prices in this example have an indicative value, and cannot be considered as a guarantee of future performance and do not constitute in any manner a firm price offer from Société Générale.

Stochastic Analysis of Various Approaches

Alternative assuming diversified risky asset portfolio with 15% volatility. UL and CPPI gtee charges reduced

Scenario	Lifestyle	CPPI	Unit-linked no guarantee	Vol Target no guarantee	Variable Vol Target with no guarantee	Unit-linked with guarantee	Vol Target with guarantee
Best	12.0%	13.4%	8.7%	11.2%	9.1%	8.2%	10.2%
75th percentile	6.2%	6.4%	5.2%	5.9%	4.7%	4.7%	4.9%
Average	5.0%	5.1%	4.3%	4.9%	3.8%	3.8%	3.9%
Median	4.3%	3.9%	4.1%	4.3%	3.5%	3.6%	3.3%
25th percentile	2.4%	0%	2.8%	2.4%	2.4%	2.3%	1.4%
Worst	-7.8%	0%	-3.4%	-6.0%	-5.1%	0.0%	0%
P(loss)	7.0%	0%	1.4%	5.5%	2.1%	0%	0%
P(beating risk-free)	69%	57%	72%	68%	61%	63%	53%

Higher upside for VT only

All Median and average returns higher than risk-free

Downside tail risk reduced

Source: SG Advisory May 2012. The objective of this table is to present the products' mechanism. Figures and prices in this example have an indicative value, and cannot be considered as a guarantee of future performance and do not constitute in any manner a firm price offer from Société Générale.

Practical Analysis of Various Approaches

- Product needs to work for regular / flexible premiums
  - Issues with future guarantee cost uncertainty
  - Hedging restrictions
  - Possible admin complexities
- Who provides the guarantee?
  - Delta-hedging vs derivative outside fund vs derivative within fund
  - Government as provider?
- Communications
  - Agree with work of Transforming Consumer Information WP
  - Advice needs to be provided supplemented by engaging information
  - Need to communicate risk/reward by reference to chances of achieving consumer's goals
  - On-going discussions throughout duration of investments

23

The Actuarial Profession
making financial sense of the future

Conclusions

Conclusions to date

- We would tentatively conclude that
  - A large number of needs of individuals, employers, providers and regulators can be met with use of investment products with guarantees
  - There is a widespread use of such guaranteed products in DC offerings around the world although these vary significantly between countries
  - A well-priced guaranteed maturity product could provide a strong default fund for DC schemes looking to meet the needs of mass-market participants
  - A number of challenges exist to develop such a product but the potential for providers should encourage such effort

We now welcome challenge, thoughts and comments

25

Contact Details

Scott Eason
Societe Generale
SG House
41 Tower Hill
London
EC3N 4SG

Tel: 020 7676 7393

scott.eason@sgcib.com

Gillian Foroughi
Towers Watson
Mid City Place
71 High Holborn
London
WC1V 6TP

Tel: 020 7170 2430

gillian.foroughi@towerswatson.com

Other working group members are:

Paul Barker, John Harsant, David Hunter, Stuart Jarvis, Gareth Jones, Viktor Knava, Gary Martin, Peter Murphy, Karl Murray, Jeev Muthulingam, Nnamdi Odozi, Tessa Page, Kingsley Washoma, Anthony Webb