Institute and Faculty of Actuaries

Matching unit-linked liabilities under Solvency II

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Agenda

Introduction & brief history
Technical Provisions in respect of linked benefits
Potential approaches to linked matching
Key observations & numerical analysis
Accounting implications
Other issues
Comments & Conclusions

Expertise Sponsorship Thought leadership Progress Community Sessional Meetings Education Working parties Volunteering Research Shaping the future Networking Professional support Enterprise and risk Learned society Opportunity International profile Journals Support

24 October 2014

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Introduction

- Linked Matching Considerations Working Party
- Purpose of the presentation:
  - Highlight some of the regulatory and practical challenges that will arise
  - Share insights into the views of other unit-linked insurers
- Not intended to offer the solutions, but will hopefully surface some of the questions!

Brief history

"the technical provisions in respect of those [linked] benefits must be represented as closely as possible by those units or, in the case where units are not established, by those assets."

Life Insurance Directive 2002/83/EC (i.e. Solvency I) – and the same wording dates back to earlier versions of the Life Directive.

"the technical provisions in respect of those [linked] benefits must be represented as closely as possible by those units or, in the case where units are not established, by those assets."

Solvency II directive, Article 132, paragraph 3

Conclusion

- Wording is identical
- Therefore - Nothing has changed
- No need to consider the issue any further
- Carry on with what you are doing…
- This is therefore the shortest presentation in Life Convention history

But wait…

"the technical provisions in respect of those [linked] benefits must be represented as closely as possible by those units or, in the case where units are not established, by those assets."

Life Insurance Directive 2002/83/EC (i.e. Solvency I)

"the technical provisions in respect of those [linked] benefits must be represented as closely as possible by those units or, in the case where units are not established, by those assets."

Solvency II directive, Article 132, paragraph 3

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What is meant by 'Technical Provisions in respect of [linked] benefits'?

- Clearly, a lot hangs on what is meant by this phrase.
- Though common to both directives it is not defined explicitly in either, or elsewhere in UK or Irish legislation
- In search of guidance on the Solvency II meaning we have also looked to:
  - The Level 2 text (Draft Delegated Acts)
  - Level 3 Guidance
  - SOLPRU
  - Regulators (PRA / CBI / EIOPA)
- There is very little out there.

Does SOLPRU cast any light?

Linked benefit – a benefit payable under a linked long term contract of insurance…the amount of which is determined by reference to…the value of a property of any description...

Linked long-term liabilities – the insurance obligations in respect of linked benefits under a long-term contract of insurance.

Where a firm carries out linked long-term contracts of insurance, the firm must cover its linked long-term liabilities as closely as possible with:

where the linked benefits are linked to the value of units, those units;

where the linked benefits are linked to the value of assets in an internal linked fund…

where the internal fund is divided into notional units, the assets represented by those units;

in a case where notional units are not established, those assets;

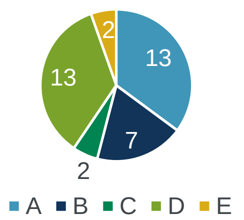
…

Views of other actuaries…

What is meant by 'Technical Provisions in respect of [linked] benefits'?

A. Surrender/Face Value of units
B. BEL for unit linked **policies**
C. The element of the BEL that depends on unit values*
D. B but with an allowance for the risk margin
E. C but with an allowance for the risk margin

Survey responses (36)



* (e.g. ignoring fixed cashflows, monetary expenses but allowing for AMCs and surrender values)

We also asked what companies plan to do

Despite the mixed views on definition of TP for linked benefits, the vast majority of respondents indicated that they currently intend to fully match the surrender value of units with unit-linked assets.

However, respondents were also clear that they have not fully decided.

- 21 of 37 respondents have not actively considered the issue.
- 24 of 37 respondents have not decided what approach they are taking.
- 5 have decided the approach, but have not actively considered the issue!

Solvency II Directive - TP

Technical Provisions = **BEL** + **Risk Margin**

- So we need to understand:
  - What is the **BEL for linked benefits**?
  - What is the **Risk Margin for linked benefits**?

BEL for linked benefits

Technical Provisions = **BEL** + **Risk Margin**

- Could be surrender value given no change in wording?
- **But** other elements of the BEL will move with unit prices.
- Directive suggests: BE of the value of linked benefits paid to policyholders, i.e. allowing for fund charges and lapses.
- Therefore, we believe it is not the BEL for the whole contract.
- Question around investment expenses linked to fund values.

Risk Margin for linked benefits…

Technical Provisions = BEL + Risk Margin

- Arguably nil. RM is calculated at company level and not in respect of individual contracts
- But needs to be considered in determining matching policy
- Part of RM will move in line with changes in unit values – more on this point later.

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Agenda

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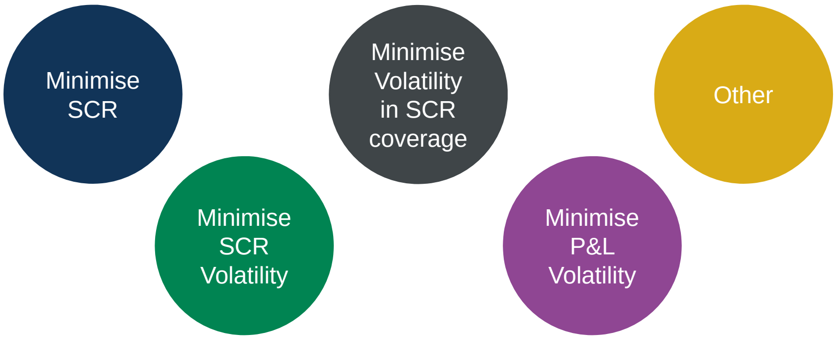
Let's ignore the regulations...

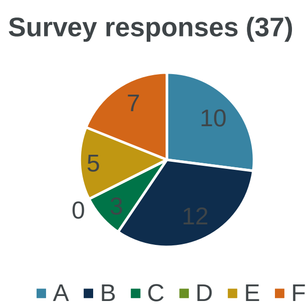
- Given a free-rein, what would be the sensible approach to unit-linked matching?
- Crucially this would depend on your objectives



What are others trying to achieve?

Given a free rein to decide matching strategy which of these objectives would be your company's primary target?

A. Stable solvency cover (available assets / SCR)
B. Stable level of excess assets (available assets – SCR)
C. Stable level of available assets
D. Stable SCR
E. Stable earnings
F. Other



Terminology

- In this presentation we use the following terms…

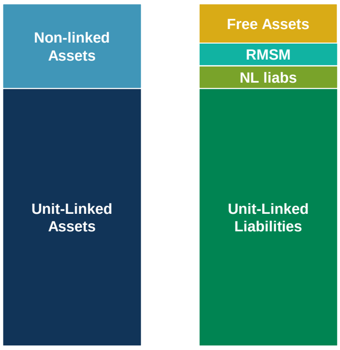
Funding: holding linked assets equal to linked surrender values.
Under-funding: holding linked assets lower than linked surrender values.
Matching position: The degree to which you are under-funded.
VIF asset: The present value of future cashflows on the in-force business (allowing for Solvency II contract boundary).
UL VIF: The element of the VIF that depends on the value of the current unit liability.

In a Solvency I world…

- Fully funded position is typical (required)
- For investment / pension business this leads to:
  - Little volatility in Solvency position
  - Little volatility in IFRS P&L

S1 Balance sheet – sample company

- Straightforward, unit-linked single premium products
- What is the impact of a movement in fund values?



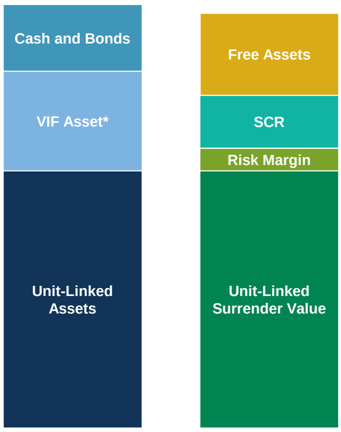
- Change in value of UL Assets offset by change in UL liab.
- Second order impact on NL liabs
- Limited (no) impact on RMSM
- Limited impact on Free Assets
- Limited impact on IFRS P&L

In a Solvency II world…

- Fully funded position would result in…
  - No change in the IFRS P&L
  - Change in the Solvency balance sheet – potential significant increase in volatility

S2 Balance sheet – same company

- Assuming unit-linked assets match SV of unit liabilities

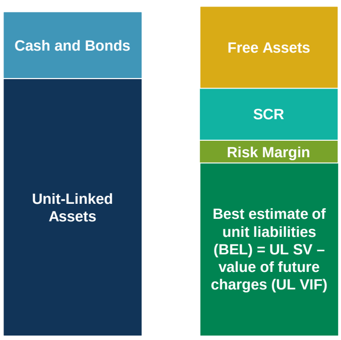


- "VIF Asset" really a negative liability (BEL<UL SV) – shown here as an asset to compare with Solvency 1 world
- Volatility comes from:
  - VIF Asset moving with unit values
  - Elements of SCR and RM moving with unit values
- Therefore, shareholder exposed to unit movements

S2 Balance sheet – same company – in Solvency 2 world

- Assuming unit-linked assets match SV of unit liabilities

Note – in reality BEL is far larger than the other liability components



- BEL is UL SV – "UL VIF"
- Volatility comes from:
  - Excess of UL Assets over BEL moving with unit liabilities
  - Elements of SCR and RM moving with unit values
- Therefore, shareholder exposed to unit movements
- SCR includes the market stress from UL assets in excess of UL BEL

Institute and Faculty of Actuaries

Agenda

Introduction & brief history
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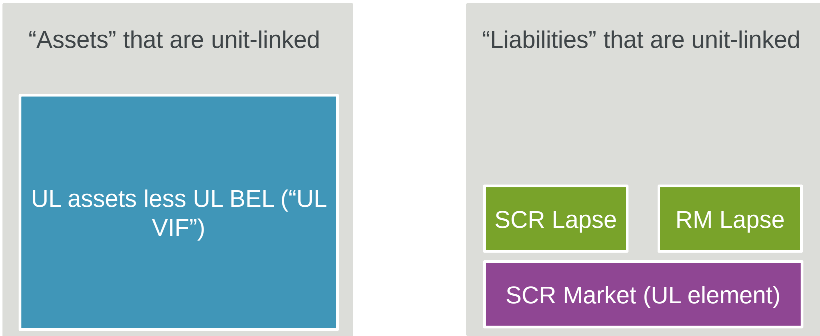
Key observations

- BEL is independent of matching position
- SCR in respect of lapses & RM in respect of lapses are therefore independent of matching position
- SCR in respect of market movements depends on matching position
- RM in respect of market movements typically nil (hedgeable)

Important (not obvious?) observation

- The SCR for lapses, an element of the market SCR, and the RM for lapses all move in line with movements in unit-values (excluding the UL BEL on both sides):



Numerical examples

- Let's illustrate this with some sample (not real) numbers for a simple investment / pension company

	Time Zero
Opening UL Liability (SV)	£1,000m
Term of projections	15 years
Risk Free Rate	Flat 2% p.a.
Lapses	Flat 5% p.a.
Total Assets (ignoring VIF)	£1,020m
SCR market shock	40%
SCR mass lapse shock	40%
AMC rate	0.50% p.a.

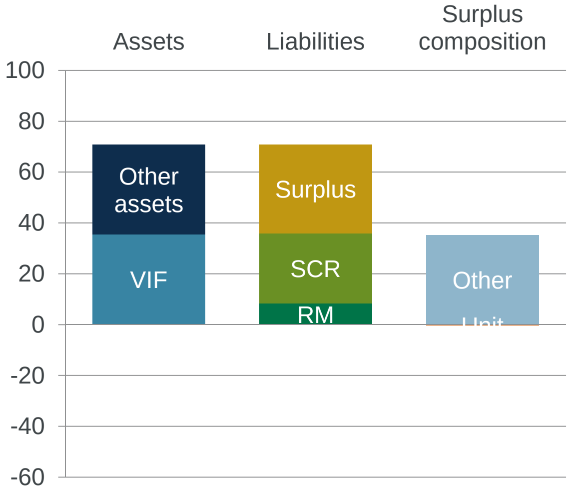
Initial Calculations…

- Based on those parameters we calculate…

	Time Zero
BEL	£949m
UL VIF	£51m
SCR Lapse	£20m
SCR Market	Depends on level of funding
RM Lapse	£8m

- Graph on next slide shows the impact of varying the level of funding
- 100% underfunding means holding UL Assets = BEL
- 0% underfunding means holding UL Assets = UL SV

Assets and Liabilities Underfunding 30%Term 15



"Other Assets" include the release from unit underfunding

Objectives

- Varying the funding percentage can help the company to meet different objectives.
- 30% in this case is “best” is purely from the perspective of covering any “liabilities” that move in line with unit-linked assets with assets that move in the same way.
- May not address other objectives.

Institute
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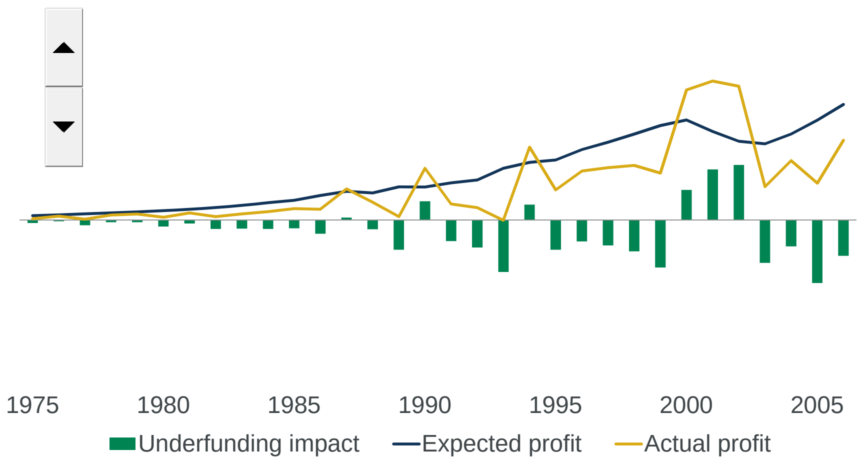
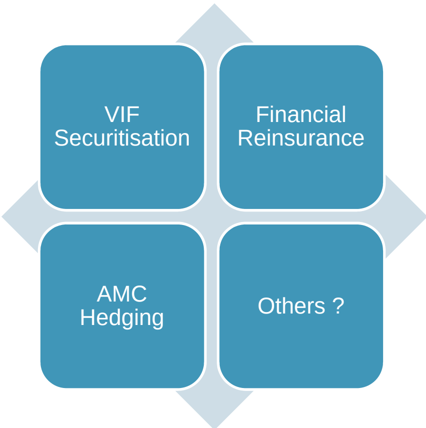
P&L Volatility

- Arguably the biggest challenge for this approach is the impact on the IFRS P&L
- For Investment business, future management charges are not recognised.
- Therefore, underfunding will leave an exposure to market movements.
- This could lead to very significant levels of volatility in the P&L result.
- Could impact planned dividends.

Historical impact of under-funding - Underfunding 50%



Alternative approaches?



- Potentially other ways to stabilise the Solvency II balance sheet
- Some may avoid IFRS volatility
- Need to be sure these approaches are consistent with Prudent Person Principle
- Need to consider costs

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Practical considerations

- UL component of BEL & RM
- How to under-fund in practice
- Timing of calculations
- Product Specific issues
- Impact of assumption changes
- Product Literature
- Stake-holders views

UL Component of BEL and Risk Margin

Identifying the UL component of the BEL and Risk Margin may not be straightforward.

UL component of BEL & RM

Our example used a simple product: AMC only, single premium		
Fixed cashflows e.g. expenses, non AMC charges	Death benefits with a fund element – e.g. max of fund and fixed amount	Future premiums on RP cases

How to under-fund in practice

How to under-fund in practice

Accurate under-funding at policy level?

Broad / Macro level of under-funding?

Operational complexity v. potential inaccuracy

Wider implications – e.g. modelling, forecasting, business plans, ORSA etc.

Other practical considerations

Timing of calculations

- Timing of BEL, SCR, RM calculations likely to vary by company.
- Level of funding therefore fixed for periods e.g. quarters.
- How to ensure fully matched?

Impact of assumption changes

- Appropriate level of funding affected by best estimate assumptions.
- Funding position will vary (possibly significantly) if assumptions are changed.

Other practical considerations continued

- Under-funding may not work for:
  - Portfolio bond / wrapper type products
  - Trackers or similar
  - We have not considered issues for with profits

Product Specific issues

- Important to check / confirm whether product literature constrains approach you can take.

Product Literature

Stakeholder views

- Under-funding not an obvious conclusion to reach?
- SCR / RM element a further complication
- Will be difficult to bring INEDs, Finance Director etc. along?
- Important that conflict between Solvency volatility and IFRS volatility is understood.
- Approach taken may be influenced by market practice?

Stake-holders views

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.

Conclusions

- What can we conclude?

Clarity: It is not yet clear what scope / flexibility we will have in relation to linked matching under Solvency II.

Under-funding: It is likely that there will be some scope for under-funding, but fully under-funding may not be allowed or desirable.

Objectives: The choice of funding level will depend heavily on what you are trying to achieve. Objectives of all stakeholders will be relevant.

Accounting volatility: Under-funding likely to introduce considerable accounting volatility.

Practical Challenges: Don't under-estimate the practical complications that will arise.