

## The Financial Impact of Reinsurance under the Prudential Sourcebook

James Hillman and Jeff Davies  
November 2003

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### Introduction

- q Consultation Papers that have an impact on reinsurance
  - q 97, 143, 144, 167, 195
- q Impact on reserving for reinsurer credit risk
  - q Term Assurance, Annuities, Stop Loss (Cashless Fin Re)
- q Operational issues
- q Impact of reinsurance on Individual Capital Assessment
- q Miscellaneous questions

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### Prudential Sourcebook

June 2001	•	CP97	Proposals to replace current regulation
July 2002	•	CP143	Feedback on CP97
July 2002	•	CP144	Use of financial engineering
Jan 2003	•	CP167	Explicit responsibility of directors for setting reserves
Aug 2003	•	CP195	Capital requirements for life offices
Late 2004	•		New Integrated Prudential Sourcebook regime

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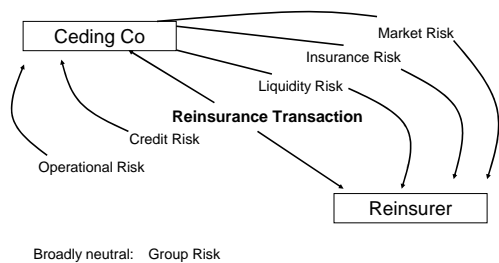
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## Risk Transfer



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## CP97: June 2001

- q Allowance for reinsurer default
- q Adequate diversification of exposure to reinsurance counterparties
- q Introduction of reinsurance limits
- q Introduces the concept of Loss Mitigation Techniques

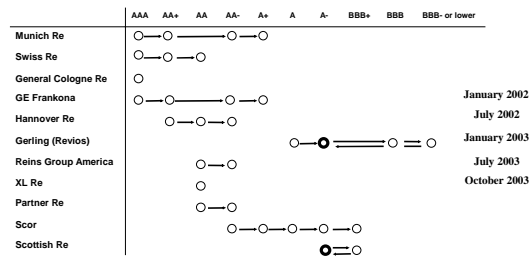
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## CP143:

- q FSA re-consulting:
  - q Credit risk for insurers: Revised rules cleaner and tackle reinsurance concentration both prospectively at purchase and retrospectively when an exposure occurs
- q Detailed feedback:
  - q Restriction of the use of with-profits fund
- q Reinsurance Limits replaced by requirement to notify FSA if thresholds are breached

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## Reinsurers Credit Ratings



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## Impact on Reserves:

- q Term Assurance
- q Annuities (no assets)
- q Annuities (assets)
- q Stop Loss (cashless Fin Re)

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## Case study 1 – Impact on Regulatory Reserves

A life insurer's term assurance business, 90% reinsured

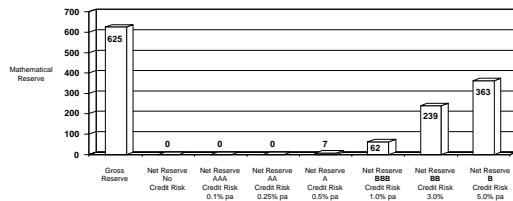
Model of business:      Average age 40 years  
                                  Average term 20 years  
                                  £100,000 of cover  
                                  Paying £14.21 per month

Gross initial mathematical reserves: £625  
 Reinsurance "asset": £678 (before any allowance for credit risk)  
 Net mathematical reserves: £0

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### Case study 1 – Impact on Regulatory Reserves (cont'd)

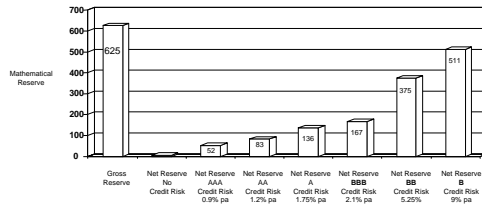
Including the credit rating of the reinsurer could lead to a fall in the value of the reinsurance "asset"



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### Case study 1 – Impact on Regulatory Reserves (cont'd)

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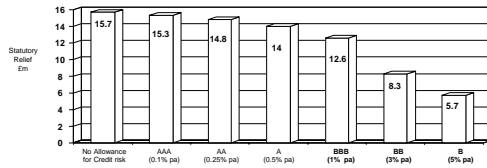
### Case study 2 – A portfolio of annuity business

- q Annuity portfolio with £500m mathematical reserves
- q Statutory basis:
  - q Interest Rate = 5%, mortality 80% PMA92 with Medium cohort improvements
- q Reinsurance basis (i):
  - q "Risk Premium"
  - q 90% PMA92 with Medium cohort improvements
- q Reinsurance basis (ii):
  - q Asset Transfer
  - q 5% interest, 90% PMA92 with Medium cohort improvements

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### Case study 2(i) – Swapping actual for fixed

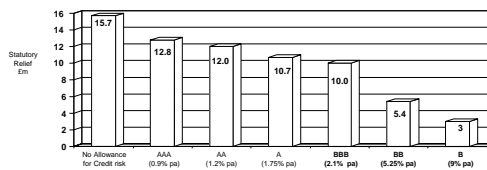
Ignoring credit risk reinsurance allows statutory relief of around £15.7m. Allowing for credit risk has the potential for substantially reducing this relief



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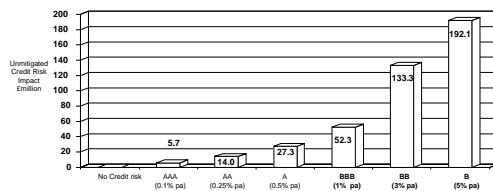
Ignoring credit risk reinsurance allows statutory relief of around £15.7m. Allowing for credit risk has the potential for substantially reducing this relief



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### Case study 2(ii) – Asset Deal

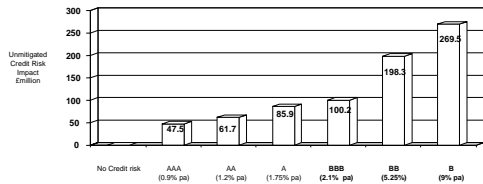
If the premium is paid up-front to the reinsurer then insurers need to be very confident in their credit risk mitigation approach as they are relying on them for potentially very large amounts



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### Term and Annuity Statutory Relief

£m	Aggregate reinsurance Credit	Free Assets
	31/12/2002	31/12/2002
Legal & General	2,057	4,245
Alba Life	612	161
Norwich Union L&P	439	3,325
Standard Life	359	4,213
Scottish Provident	472	326
Scottish Equitable	200	1,093
Century Life	403	60

Source: FSA Returns, 2002. Forms 9 & 51-55.

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### CP144

- Acceptable financial engineering ...
  - a legitimate commercial purpose
    - strengthening solvency e.g. through risk transfer
    - accessing overly prudent economic reserves
  - credit commensurate with risk transferred
    - e.g. taking into account related agreements
  - considered within context of firms overall risk management strategy
  - rules and requirements fully complied with
  - improved transparency
  - appropriate supervisory scrutiny

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#### CP144

- q High-level standards - Guidance Note
  - q broad description of financial engineering
  - q good and bad financial engineering
    - q bad if used to obscure a firms underlying financial condition or designed to mislead
    - q bad if no genuine risk transfer but full credit is taken
    - q bad if used to remove all margins
    - q guidance on implicit items a benchmark
  - q management and control
    - q appropriate understanding and risk controls
  - q accounting & reporting
    - q include allowance for contingencies and credit / legal risk

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#### CP144

- q General tone
  - q there is a legitimate role for financial engineering, including financial reinsurance at the present time
  - q fair value and solvency II will address some of the current anomalies that financial engineering seeks to overcome
  - q increased management responsibility and greater disclosure with respect to financial engineering

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#### Reinsurance Activity: Financial Reinsurance in place

Financial Reinsurance in place

31 <sup>st</sup> December 2000	£2.9bn
31 <sup>st</sup> December 2001	£2.4bn
31 <sup>st</sup> December 2002	£2.9bn
31 <sup>st</sup> December 2003	£? bn

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### Stop Loss (Cashless Fin Re)

#### Pre –PSB

$$[CF * (1 + i)^t] / (1 + i)^t$$

CF = amount of cashless financing "advanced"

i = valuation rate of interest

t = expected time at which claims will be made

#### Post – PSB

$$[CF * (1 + j)^t] / (1 + i + d)^t$$

d = default risk addition to yield

j = i + d?

j = i?

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### Impact of PSB on Fin Re

- q Fin Re will be restricted to Non-Profit business
- q Existing With Profits Fin Re will have no value on a fully realistic basis
- q Existing With Profits Fin Re will be inadmissible or will need to be restructured
  - q No transitional arrangements

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### CP167: With-profits governance, the role of actuaries in life insurers, and Certification of insurance returns

- q Directors and senior management become more explicitly responsible for decisions taken on actuarial advice.
- q Reinsurance will generally represent:
  - q Largest figure on the balance sheet relating to a single transaction
  - q Largest transactional risk
  - q Largest counterparty risk

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**Review of UK insurers' risk management practices:  
October 2003**

- q No life company responded that they were concerned about the impact of reinsurer default
- q No life company responded that they were concerned about the operational risk associated with reinsurance

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**Question for the Board:**

- q How many treaties are unsigned?
- q Does the board understand the reinsurance treaties?
- q Is the organisation complying with all the terms of the agreement?
- q Does the board understand the implications of non-compliance?
- q Does the organisation have a reinsurance strategy/philosophy document?
- q Does the board know what the current credit ratings of its reinsurers are?

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**Arbitrations per Reinsurer**

	1998 – 2001	1994 – 1997	1990 - 1993
Zero	10	20*	21
One	1	2	3
Two		1	2
Three	1	-	-
Four	2	1	-
Nine	1	-	-

\* One company resolved through mediation

Source: Reinsurance Arbitration Survey 1998 – 2001, Aon Worldwide

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### CP195: Enhanced capital requirements and individual capital assessments for life insurers

- q Companies must justify exposures to reinsurance within a group are managed to a suitable level
- q Reinsurance exposures to subsidiary undertakings where the subsidiary is managed in a "designated territory" are excluded from the proposed limits
- q The FSA may go ahead with different exposure levels for different credit-quality reinsurers at one stage in the future
- q The onus remains on companies to justify to the FSA's satisfaction that their credit risk management is appropriate
- q Value of non-profit business in the with-profits fund can be taken as a deduction from capital requirements, subject to prescribed stress tests for credit risk

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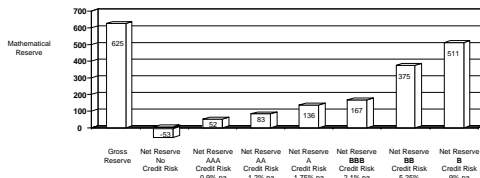
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### Value of non-profit business in the with-profits fund

Including the credit rating of the reinsurer could lead to a fall in the value of the reinsurance asset



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### Conclusions

- q Much time and effort has gone into with-profit business. Non-profit business needs more thought
- q Reinsurer credit worthiness now has tangible and measurable value
- q Operational issues are currently underestimated
- q 90% quota share one size fits all might not be appropriate going forward

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### Miscellaneous Questions

- q Level playing field between non-profit and with-profit fund?
- q Ability to reinsure property linked business?
- q Credit risk on intra-group reinsurance between UK-regulated entities?
- q Regulation of small entities with large reinsurance credit?
- q Power of unregulated rating agencies?
- q A lower deduction for credit risk from unrated reinsurers than for some investment grades?

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### The Actuarial Profession

making financial sense of the future

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