

## 2001 Healthcare Conference *Keeping Health on Track*

21-23 October 2001  
Scarman House

---

---

---

---

---

---

---

### Healthcare Guarantees



Volvo ?



Trabant ?

---

---

---

---

---

---

---

### Healthcare Guarantees

#### Brian Paton

- What is a guarantee ?
- Previous work
- Modelling the guarantee risk & variability

#### Neil Robjohns

- Views from Stakeholders
- A Perspective from History
- Current State of Play
- Do we have a rational, sustainable position ?

---

---

---

---

---

---

---

## Healthcare Guarantees

---

### What is a guarantee ?

- Explicit premium guarantee
- Implicit premium guarantee
- Non-premium guarantee

---

---

---

---

---

---

---

## Healthcare Guarantees

---

### Previous work

- A few relevant papers
  - Claim analyses
  - Reserving practices
  - Trends
  - Product design
- Healthcare guarantees working party

---

---

---

---

---

---

---

## Healthcare Guarantees

---

### Modelling the guarantee risk & variability

- Stochastic model
- One model out of many
- Subjective input parameters
- Detail at previous conferences

---

---

---

---

---

---

---

## Healthcare Guarantees

---

### Modelling the guarantee risk & variability

- Process risk
  - Write more business !
  - Small in-force claim portfolio
- Pricing error
  - Credibility
  - Appropriateness
  - Trends
  - Shocks

---

---

---

---

---

---

---

## Healthcare Guarantees

---

### Modelling the guarantee risk & variability

- Calculate 99th percentile reserves
- Economic basis reserves
- Calculate premium to support capital

---

---

---

---

---

---

---

## Healthcare Guarantees

---

### Modelling the guarantee risk & variability

- Setting parameters - little science

---

---

---

---

---

---

---

## Healthcare Guarantees

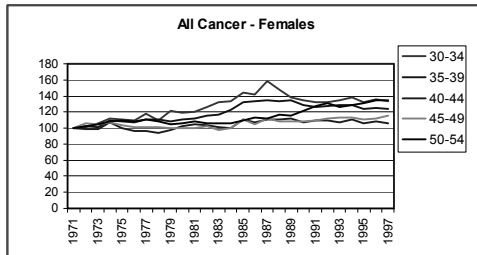
### Modelling the guarantee risk & variability

Relative A/E for largest offices (average all offices=100%)

	Life Term	IPI (Inceptions)	CI
<b>Best</b>	83%	60%	<50%
<b>Worst</b>	130%	135%	144%

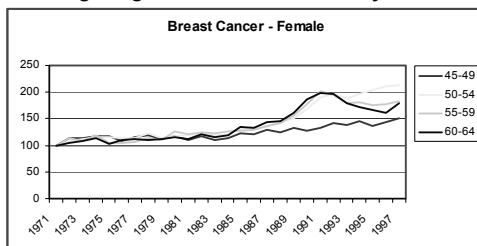
## Healthcare Guarantees

### Modelling the guarantee risk & variability



## Healthcare Guarantees

### Modelling the guarantee risk & variability



## Healthcare Guarantees

### Modelling the guarantee risk & variability

- Results for a CI policy only
- 40 year old, 25 year term, £ 100 k
- Deterministic premium £ 547.61
- 99th percentile premium +23%
- Similar to +20% and 2% trend

---

---

---

---

---

---

---

## Healthcare Guarantees

### Modelling the guarantee risk & variability

- Compare guaranteed/reviewable premiums
- 5 offices : 9%, 3%, 17%, 8%, 8%
- Average 9%
- Our 23% loads a fully reviewable rate
- 15% loading for implicit guarantees !

---

---

---

---

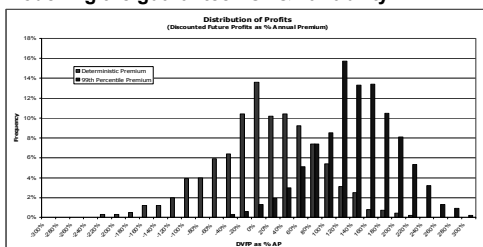
---

---

---

## Healthcare Guarantees

### Modelling the guarantee risk & variability



---

---

---

---

---

---

---

## Healthcare Guarantees

- Views from Stakeholders
- A Perspective from History
- Current State of Play
- Do we have a rational, sustainable position ?

---

---

---

---

---

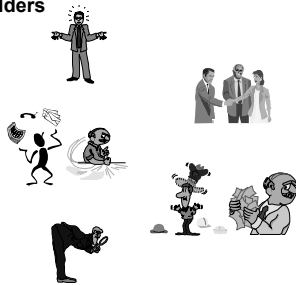
---

---

## Healthcare Guarantees

### Views from Stakeholders

- Policyholder
- Intermediary
- Insurer
- Reinsurer
- Regulator



---

---

---

---

---

---

---

## Policyholder



- "Likes certainty"
- One-off purchase, then "bottom drawer"
- Little knowledge of insurance
  - Recognises long-term insurance as fixed premium (historically)
  - Doesn't understand reviewable premiums
- Doesn't trust insurers
  - Would expect reviewable premiums to increase, certainly not to fall
- ... But still only prepared to pay 3% - 10% for a full premium guarantee

---

---

---

---

---

---

---

### Policyholder : Self Insurance ?



#### A Mortgage example :

- Income £35,000pa gross; say £2,000 pm net
- Loan £90,000
- Mortgage Payments £580 pm
- CI Cover £ 45 pm

- A 1% increase in mortgage rates hits monthly budget as hard as a doubling of the CI cover premium.

#### ■ Consider also :

- variations in other expenditure
- Likely duration of policy and timescale for premium reviews

---

---

---

---

---

---

---

---

### Policyholder



- Poorly informed
- Easily led to guarantees
- Provided the apparent cost is "low"
- ... but logic is questionable in context of other household finances.

---

---

---

---

---

---

---

---

### Intermediary



- Again, history and habit play a large part
- Fixed premiums are easy to explain
- Fear comeback from clients' if a recommendation for reviewable premiums turned sour on adverse claims experience
- Again, distrust of insurers and reviewable premiums
- Fixed premium business can be an easier sale, and earn more commission than reviewable premium business !
- ... but can successfully promote reviewable premium where the market choice is more limited
- IFAs the prime driving force for CI / IP guarantees recently ?

---

---

---

---

---

---

---

---

## Insurer



- Face market (intermediary) demand and strong competition
- Attracted to potential higher sales with guarantees
- Menu products encourage consistency within a range
- History of problems with reviewable premiums
  - implicit guarantees
  - communications and systems issues
- ... but sees risks and capital constraints
- Looks to pass guarantee risk off to reinsurers




---

---

---

---

---

---

---

---

## Reinsurer



- Client demand for premium guarantees
- Strong competition and market capacity
- Weighs up risk and capital requirements, plus target shareholder returns
- Better placed than insurer to assess and diversify risk ?
  - across product
  - across companies
  - across territories
- "Happy to carry the risk" ?




---

---

---

---

---

---

---

---

## Regulator



- Concerned about risk assessment
- Concerned about adequate capital
- Limited reflection of guarantees in required solvency margins
- Little uniformity in valuation bases for guaranteed healthcare business
- Asks searching questions ?
- Not a "top of the pile" issue ? Yet ??
- Will Risk Based Capital raise the profile of guarantee risks ?

---

---

---

---

---

---

---

---



## Healthcare Guarantees

---

### A Perspective from History

- Term Assurance
- Income Protection
- Critical Illness
- Long Term Care
- PMI

---

---

---

---

---

---

---

### A Perspective from History

---

#### Term Assurance

- Long history of fixed premiums
- Long history of falling risk rates
- Brief flirtation with reviewable rates in response to AIDS
- Premium guarantees almost universal
- Guarantee loading effectively nil.

---

---

---

---

---

---

---

### A Perspective from History

---

#### Income Protection

- Long history as "Cinderella" product
- Largely fixed premium products until the 1980's
- Emerging losses prompted a re-think !
- Long enough history of risk rates steadily rising
- Many reviewable premium products launched, but some move back towards guarantees lately
- More reviewable than fixed premium products on offer, but guarantees account for 60%+ of sales in IFA market
- Typical 25-year guarantee loading around 25%

---

---

---

---

---

---

---

## A Perspective from History

### Critical Illness

- Introduced in mid-80's ; mostly unit-linked whole life, with initial 10-year "guarantee"
- Moved into IFA and Mortgage markets in early / mid-90's
- Reinsurer risk rates were falling (competition driving out initial margins)
- Relatively easy to offer competitive guarantees ...
- ... so market for guarantees "snow-balled"
- Premium guarantees now widespread (90%+ in IFA market)
- Typical 25-year guarantee loading around 10%

---

---

---

---

---

---

---

---

## A Perspective from History

### Long Term Care

- A more recent development
- Difficult and uncertain pricing
- Sales volumes remain relatively small
- Perceived as an expensive product even without guarantees
- Some guarantees given
  - single premium policies
  - some regular premium policies

---

---

---

---

---

---

---

---

## A Perspective from History

### Private Medical Insurance

- Long history as a short term insurance cover
- Rates and cover "reviewed" annually
- Long history of medical costs rising ahead of inflation
- Perceived as an expensive product even without guarantees
- Few guarantees given
  - Some 5 and 10 year covers

---

---

---

---

---

---

---

---

## Healthcare Guarantees

### Current State of Play

Look across the products at :

- 4 key sources of pricing error
- Robustness of Definitions
- Prevalence of Guarantees
- Typical Charge for Guarantees

---

---

---

---

---

---

---

## Term Assurance

- 4 key sources of pricing error
  - Credibility High
  - Appropriateness High
  - Trends Down
  - Shocks Rare
- Robustness of Definitions
  - against medical advances Good
  - against social change Good
- Prevalence of Guarantees 100%
- Typical Charge for Guarantees Nil

---

---

---

---

---

---

---

## Income Protection

- 4 key sources of pricing error
  - Credibility Medium / Low
  - Appropriateness Medium
  - Trends Up
  - Shocks Some
- Robustness of Definitions
  - against medical advances Good ?
  - against social change Poor
- Prevalence of Guarantees 30%
- Typical Charge for Guarantees 25%

---

---

---

---

---

---

---

### Critical Illness

■ 4 key sources of pricing error	
■ Credibility	Low
■ Appropriateness	Low
■ Trends	??
■ Shocks	Many ?
■ Robustness of Definitions	
■ against medical advances	Poor
■ against social change	Medium
■ Prevalence of Guarantees	60%
■ Typical Charge for Guarantees	10%

---

---

---

---

---

---

---

---

### Long Term Care

■ 4 key sources of pricing error	
■ Credibility	Low
■ Appropriateness	Low
■ Trends	?
■ Shocks	?
■ Robustness of Definitions	
■ against medical advances	Poor ?
■ against social change	Poor ?
■ Prevalence of Guarantees	Low
■ Typical Charge for Guarantees	?

---

---

---

---

---

---

---

---

### Private Medical Insurance

■ 4 key sources of pricing error	
■ Credibility	High
■ Appropriateness	High
■ Trends	Up
■ Shocks	Many ?
■ Robustness of Definitions	
■ against medical advances	Poor ?
■ against social change	Poor ?
■ Prevalence of Guarantees	Low
■ Typical Charge for Guarantees	?

---

---

---

---

---

---

---

---

## Current State of Play - Summary

	TA	IP	CI	LTC	PMI
<b>4 key sources of pricing error</b>					
Credibility	High	Med/Low	Low	Low	High
Appropriateness	High	Medium	Low	Low	High
Trends	Down	Up	??	?	Up
Shocks	Rare	Some	Many ?	?	Many ?
<b>Robustness of Definitions</b>					
against medical advances	Good	Good ?	Poor ?	Poor ?	Poor ?
against social change	Good	Poor	Medium	Poor ?	Poor ?
<b>Prevalence of Guarantees</b>					
Typical Charge for Guarantees	100%	30%	60%	Low	Low
	Nil	25%	10%	?	?



## Healthcare Guarantees



- Different drivers for different stakeholders
- Rational interaction of these groups, and risk / market conditions over time, has led to markedly different positions for each of our current main product lines
- Arguably, the current position is irrational
- CI is very exposed

