Designing annuity products for consumers needs

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Presented by

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Agenda

- Options for generating lifetime income
- Consumer needs
- Investing for life
- Managing survival
- A new model

"I don't want to achieve immortality through my work - I want to achieve it by not dying"

Woody Allen

"People will soon live twice as long as today, and have the potential to live for 1200 years"

John Harris, Scientist

Member of UK Human Genetics Commission

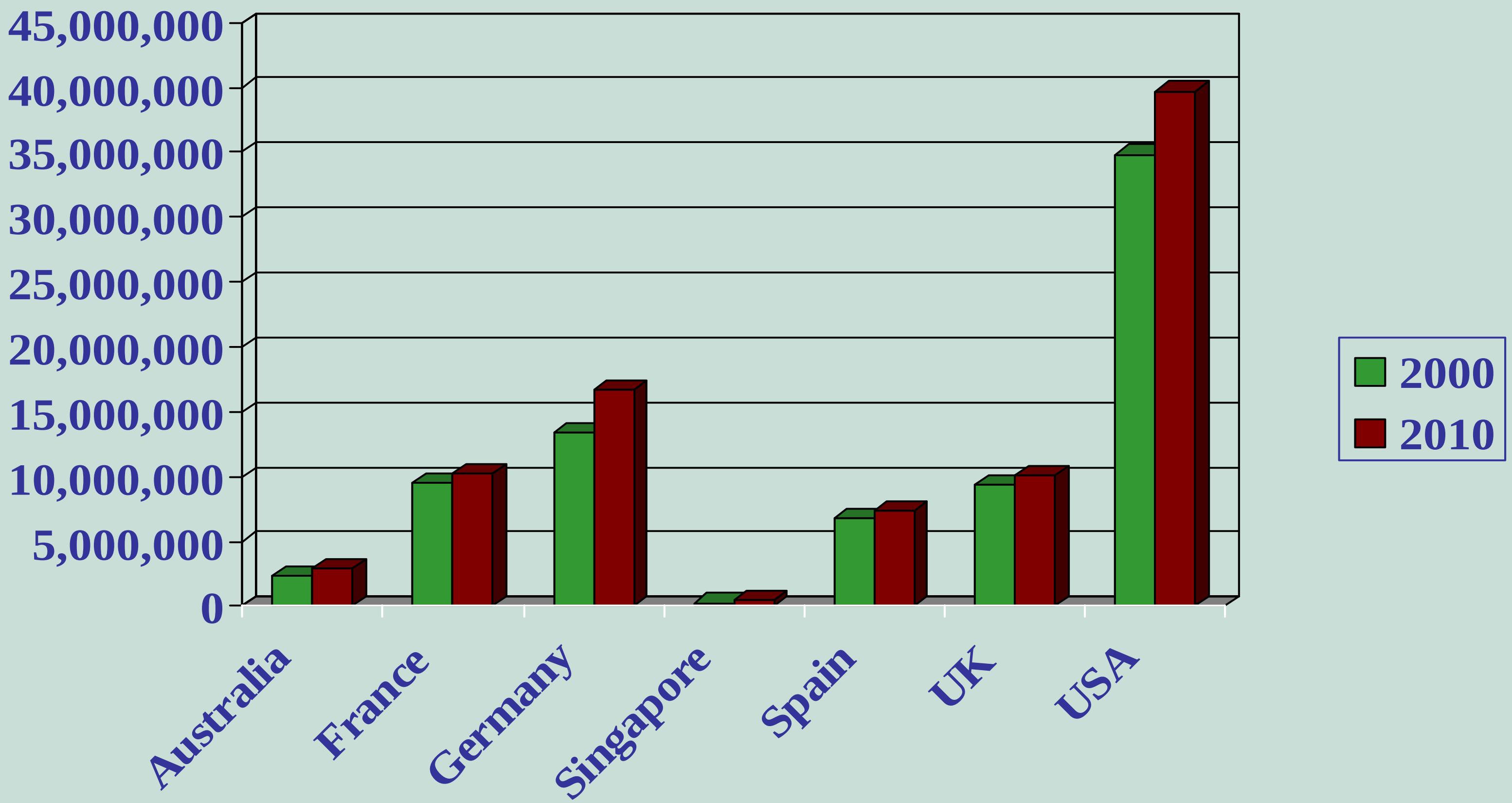
as reported Sunday Times, 25 June 2000

Funeral firm hit by 29% profit fall

Not enough people are dying in the US, according to Service Corporation International, the world's largest funeral services company

Times, 2 October 1999

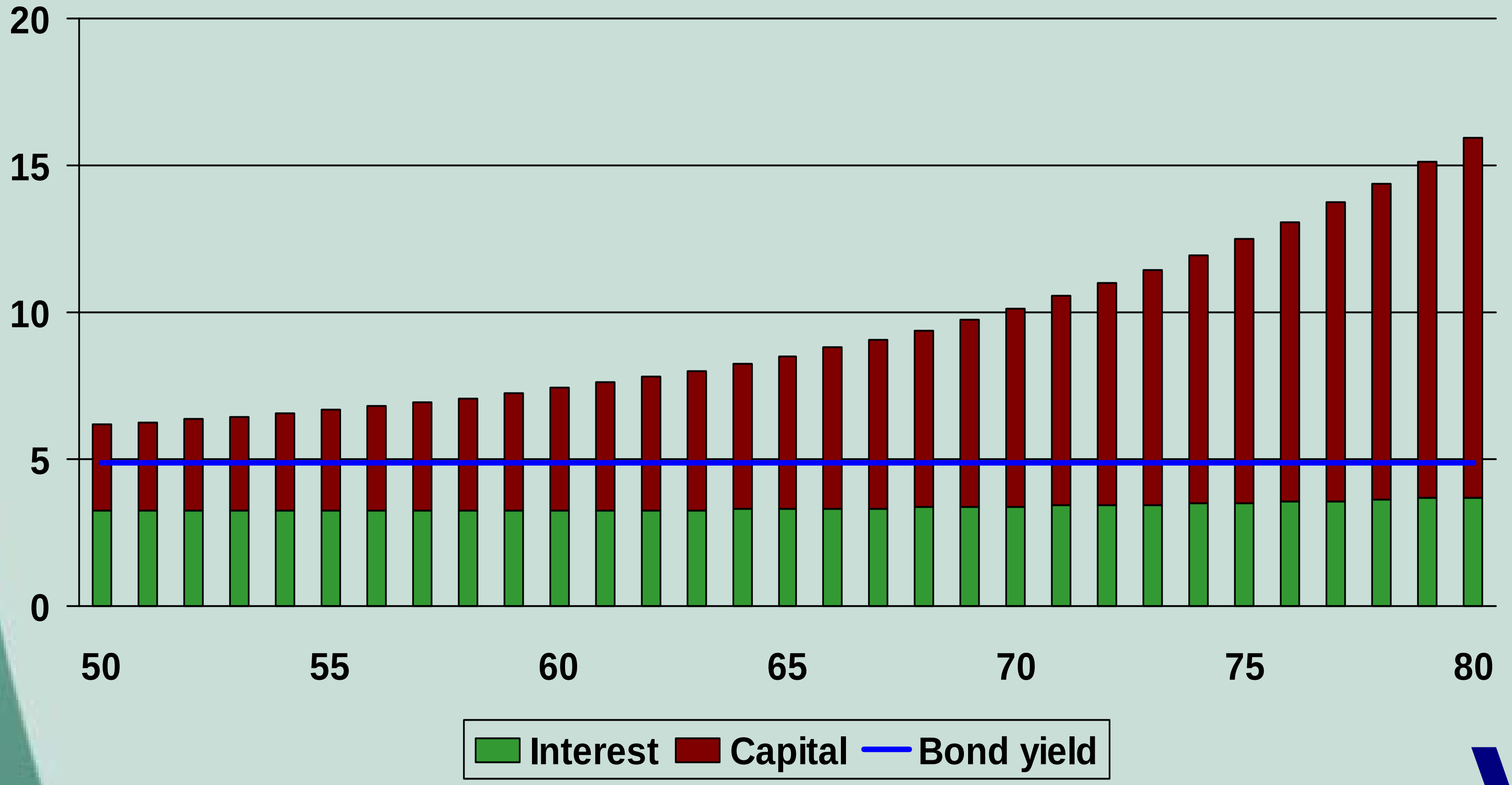
Scale of opportunities
People over 65



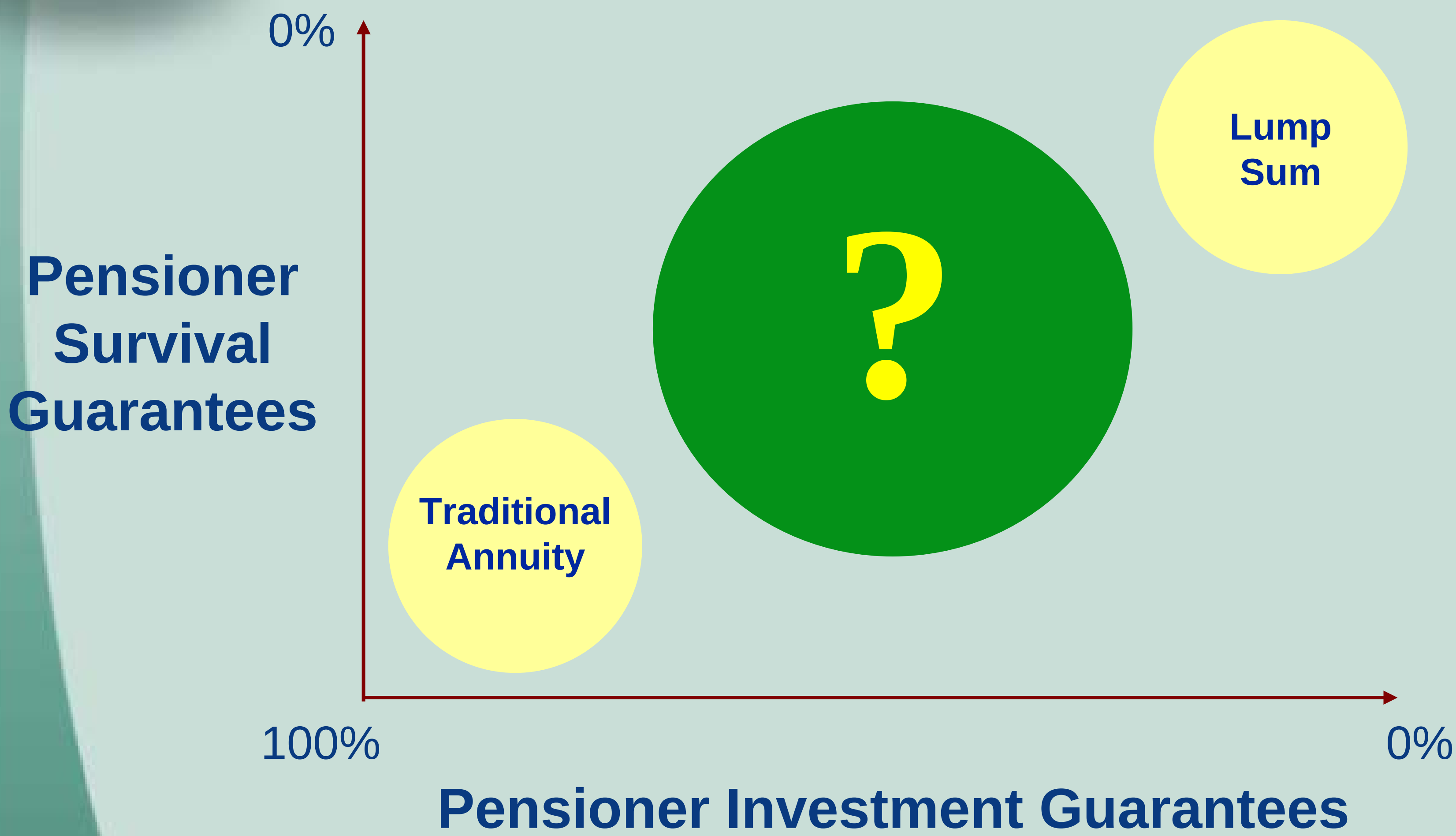
Source: US Bureau of the Census

Annuity versus bond yield

Income taken monthly in advance; interest rate 5% pa
Annuity income broken down into capital element and the balance (ie interest element)



Options for retirement income



Traditional annuities
Some important questions

- How much do the guarantees cost?
- How valuable are they to customers?
  - early in retirement/later in retirement?
  - according to other assets?
- How will lifestyles and needs change in retirement?
- Will customers change their minds over time?

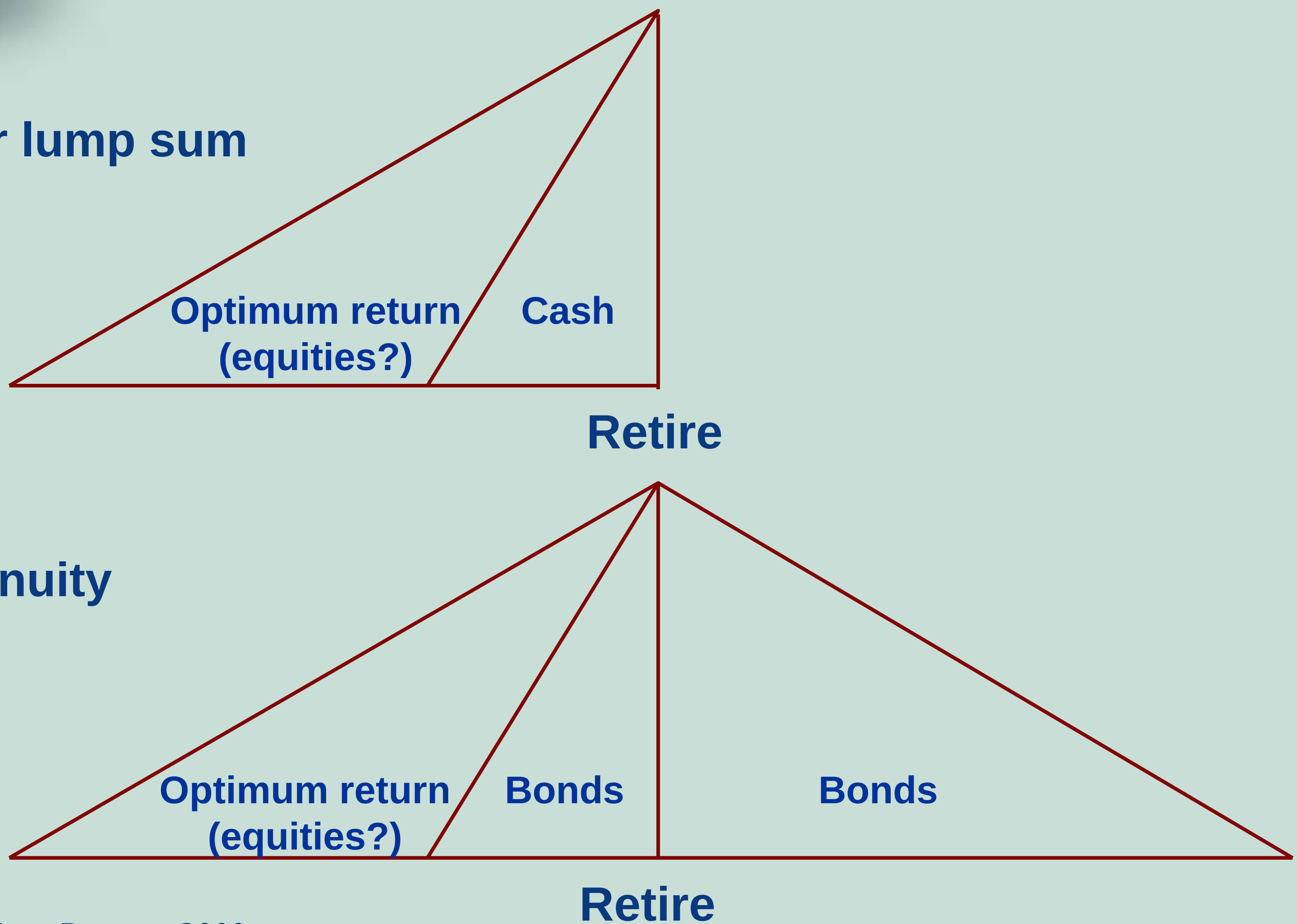
Key issues for design
The Pensioner

- Choice (investment)
- Flexibility (income)
- Protection (survival)
- Communication (trade offs)
- Fail safe

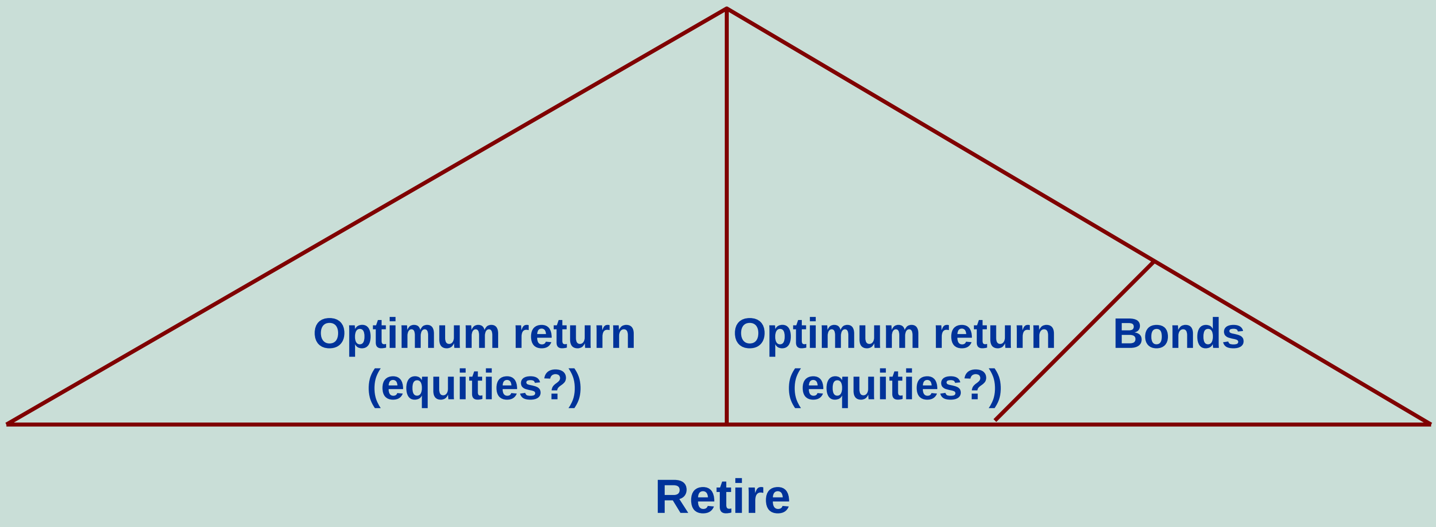
A lifetime asset allocation model Traditional

Either lump sum

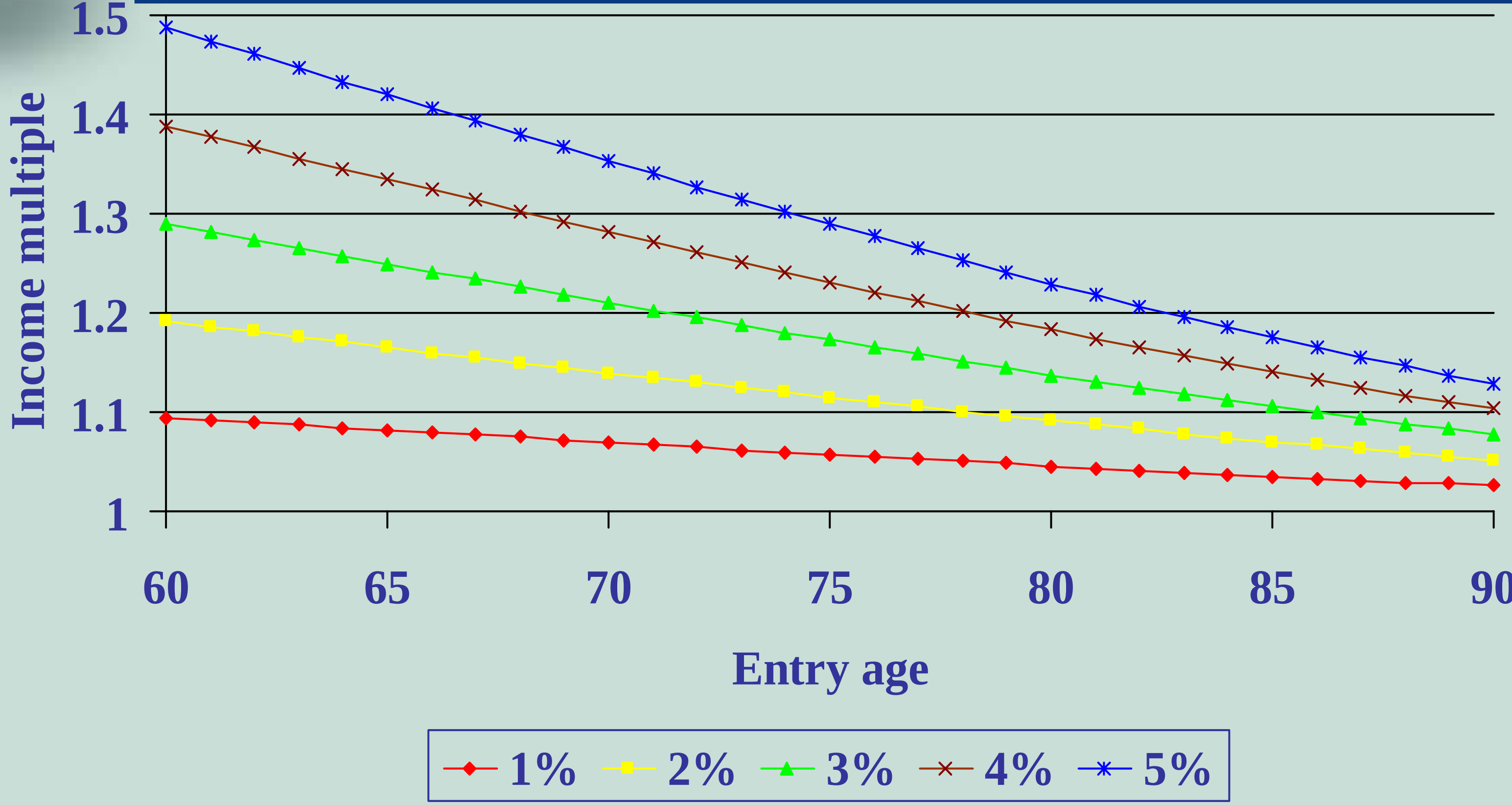
Or annuity



A lifetime asset allocation model Proposed



Effect of investment growth on supportable income - males



Base income supportable calculated at 5%.
Income multiple = income supportable assuming extra investment return resulting from equity investment of 1, 2, 3, 4 or 5% pa after charges, divided by base income. Mortality as previously

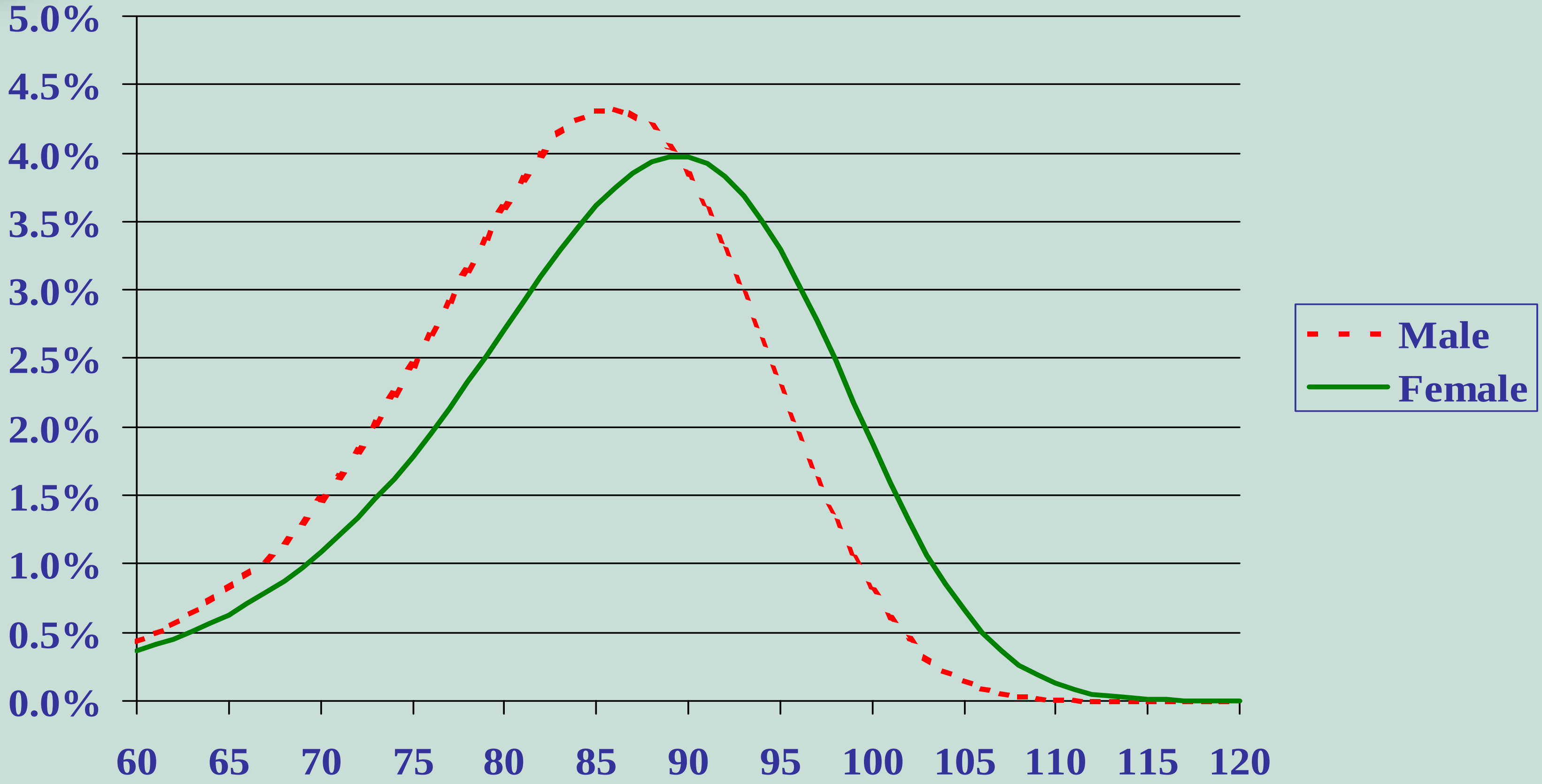
Planning retirement income

- The consumer problem is .....

  How long will I live?

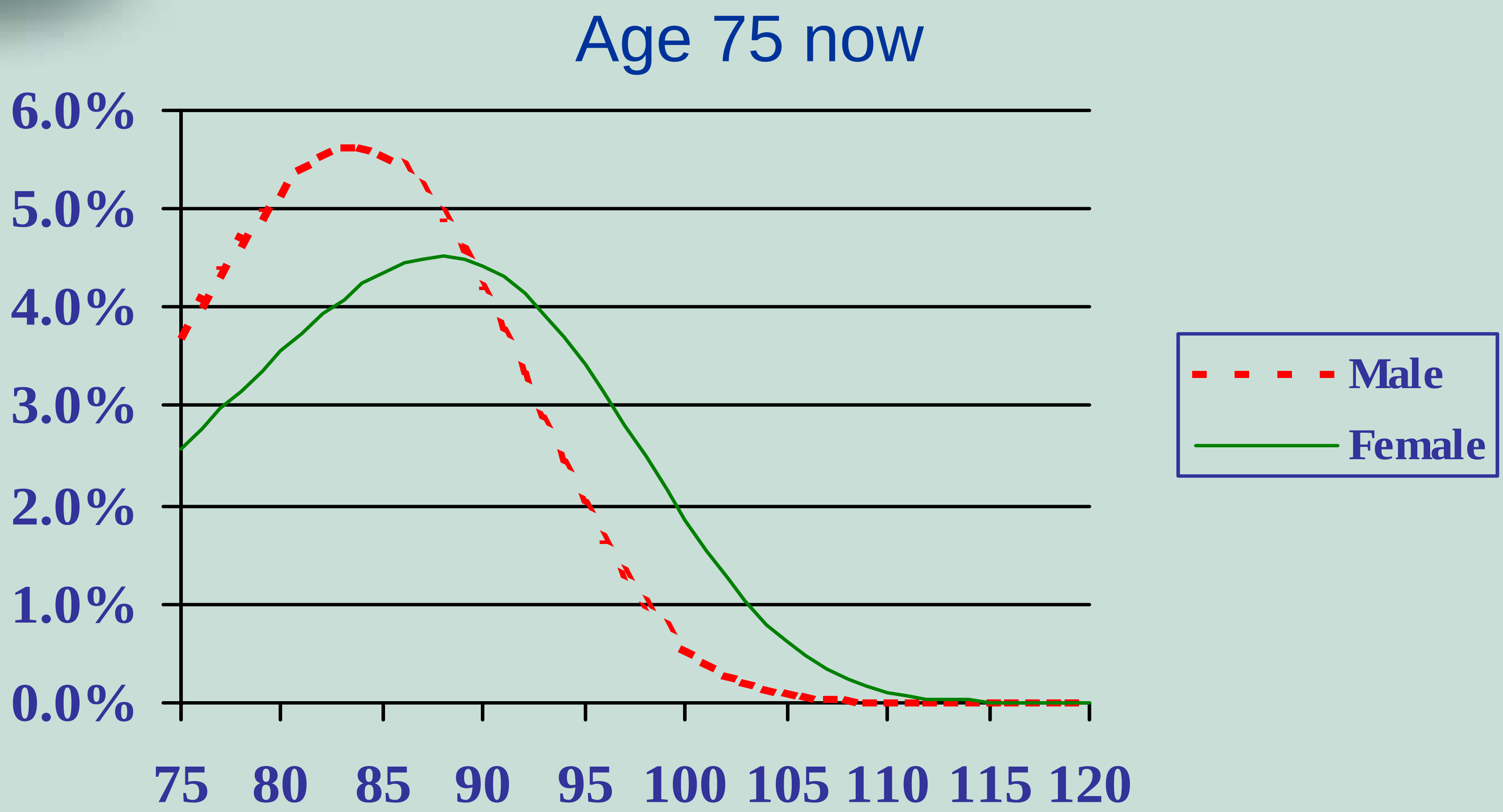
- Lifespan is a distribution not an expectation

Distribution of deaths Retirement at age 60



Mortality: PMA92/PFA92 Year of use 2001

Distribution of deaths by age now



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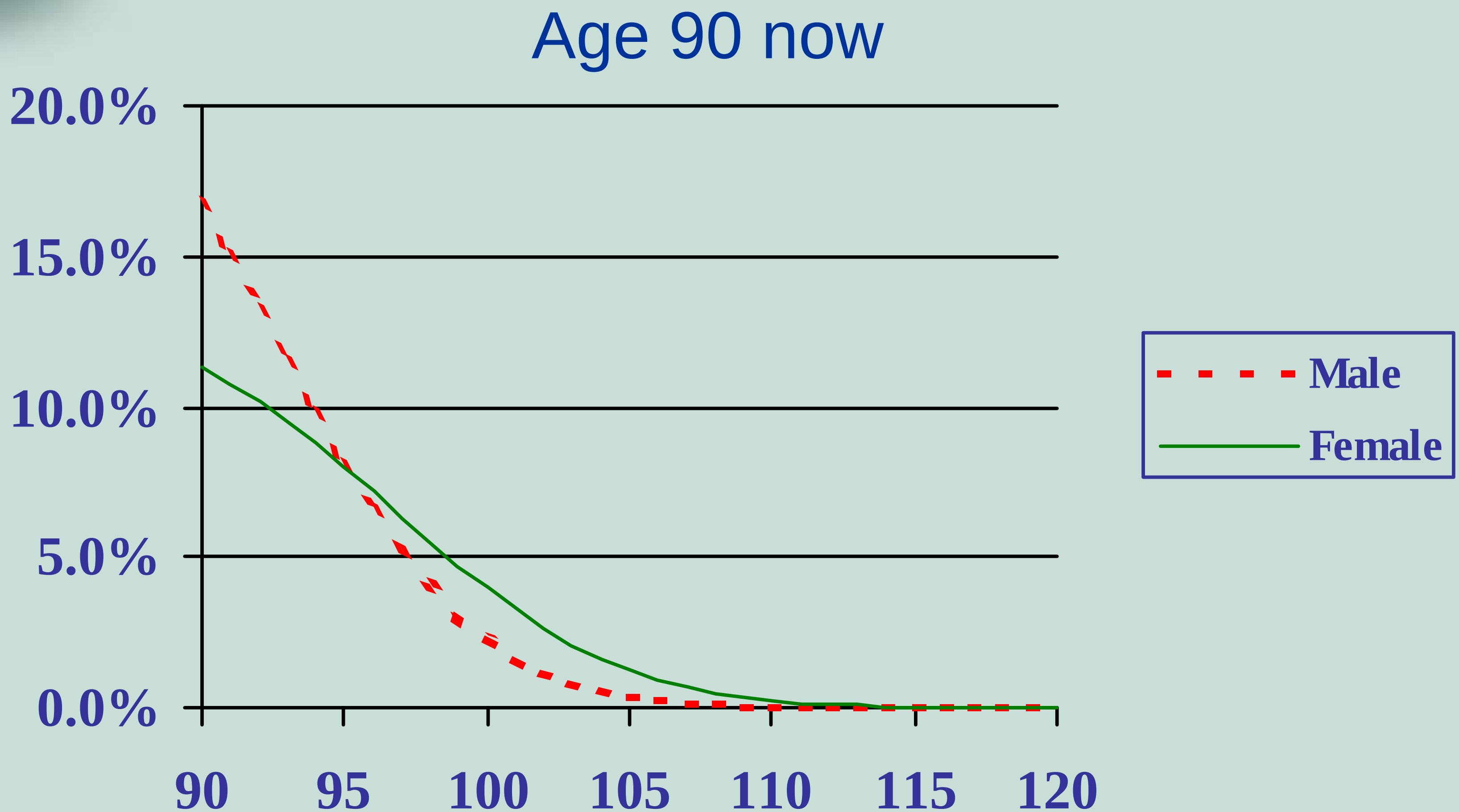
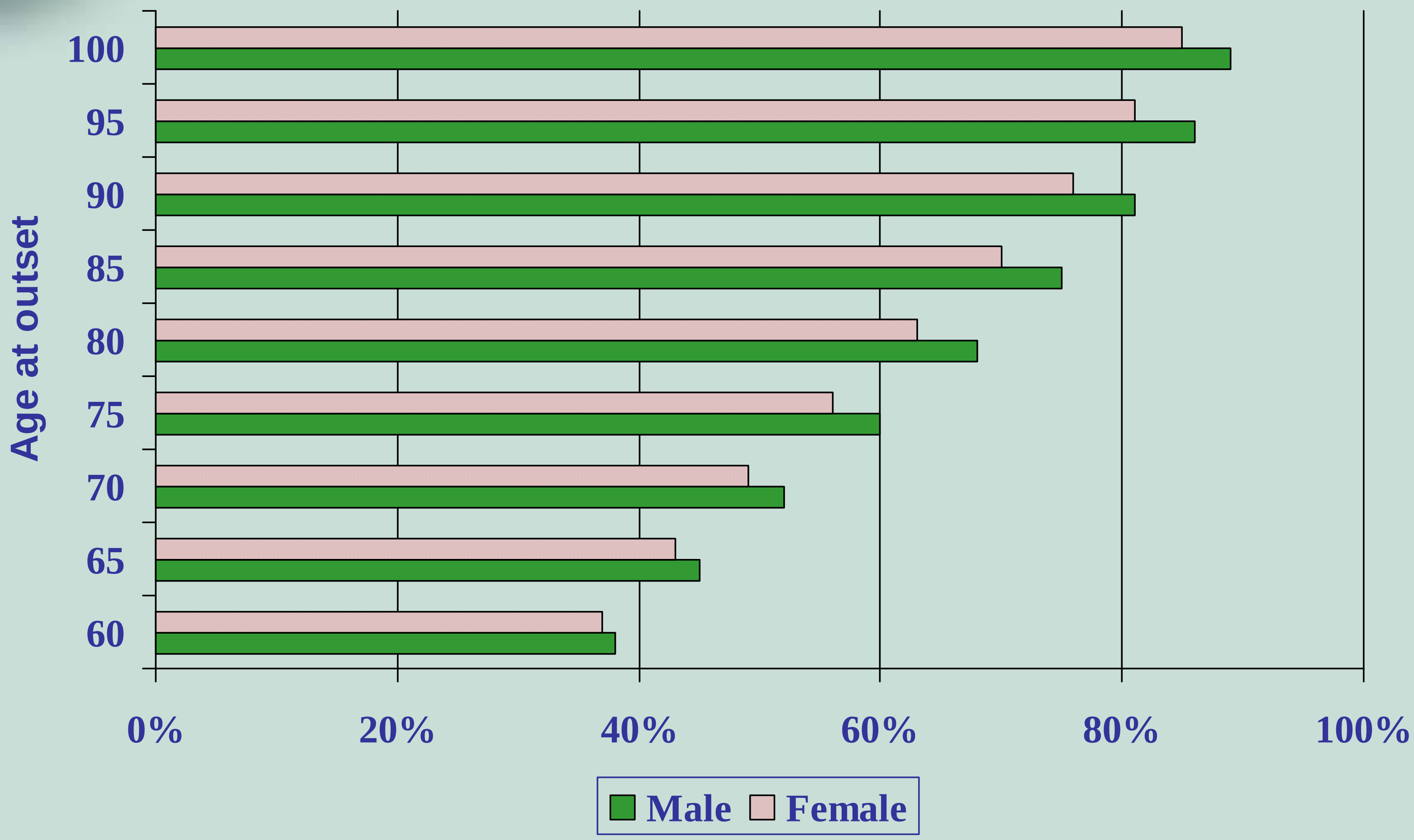


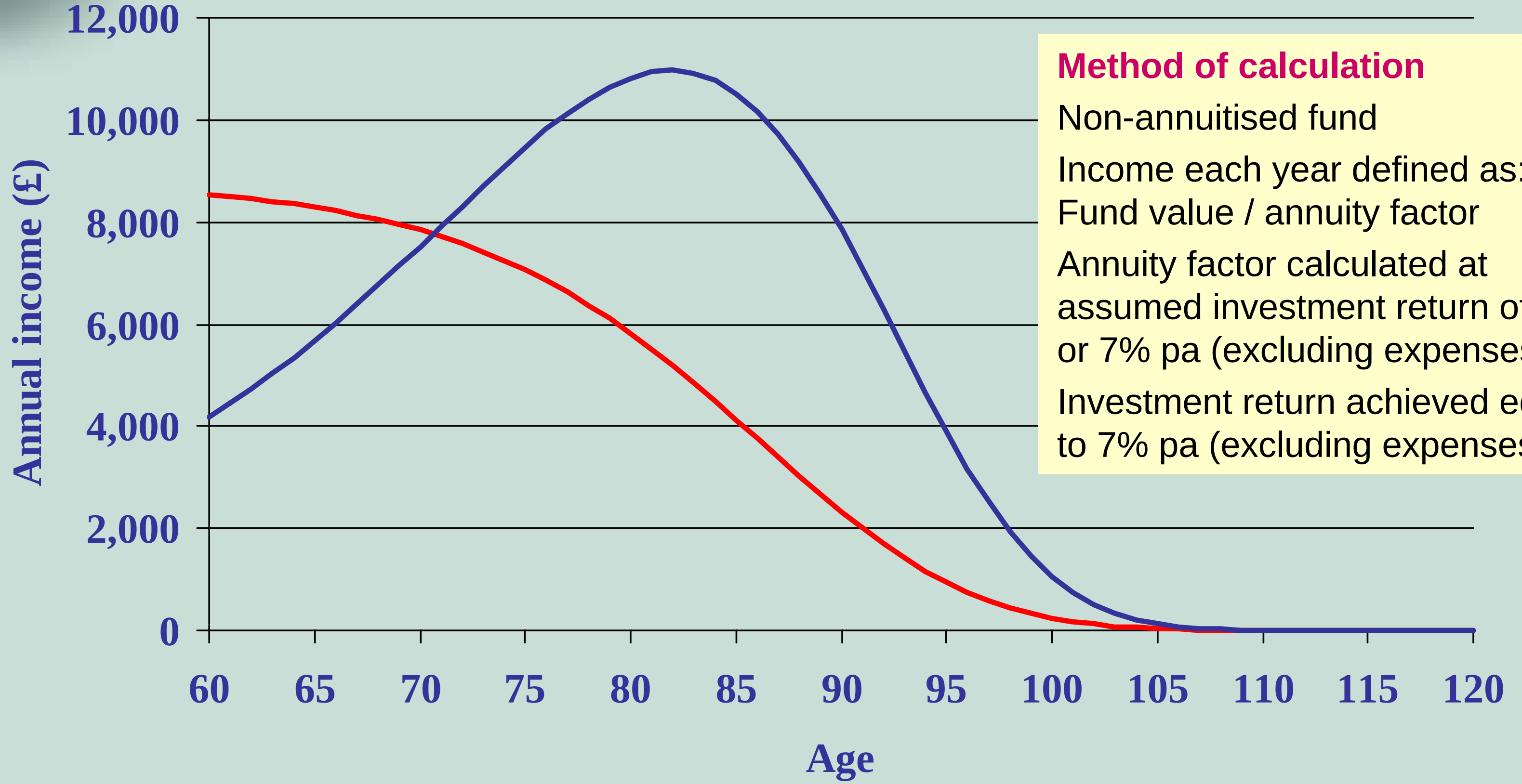
Mortality: PMA92/PFA92 Year of use 2001

Standard deviation of deaths, as a proportion of life expectancy



Mortality: PMA92/PFA92 Year of use 2001

Progression of income:
spreading fund over future life expectation



Method of calculation

Non-annuitised fund

Income each year defined as: Fund value / annuity factor

Annuity factor calculated at assumed investment return of 0% or 7% pa (excluding expenses)

Investment return achieved equal to 7% pa (excluding expenses)

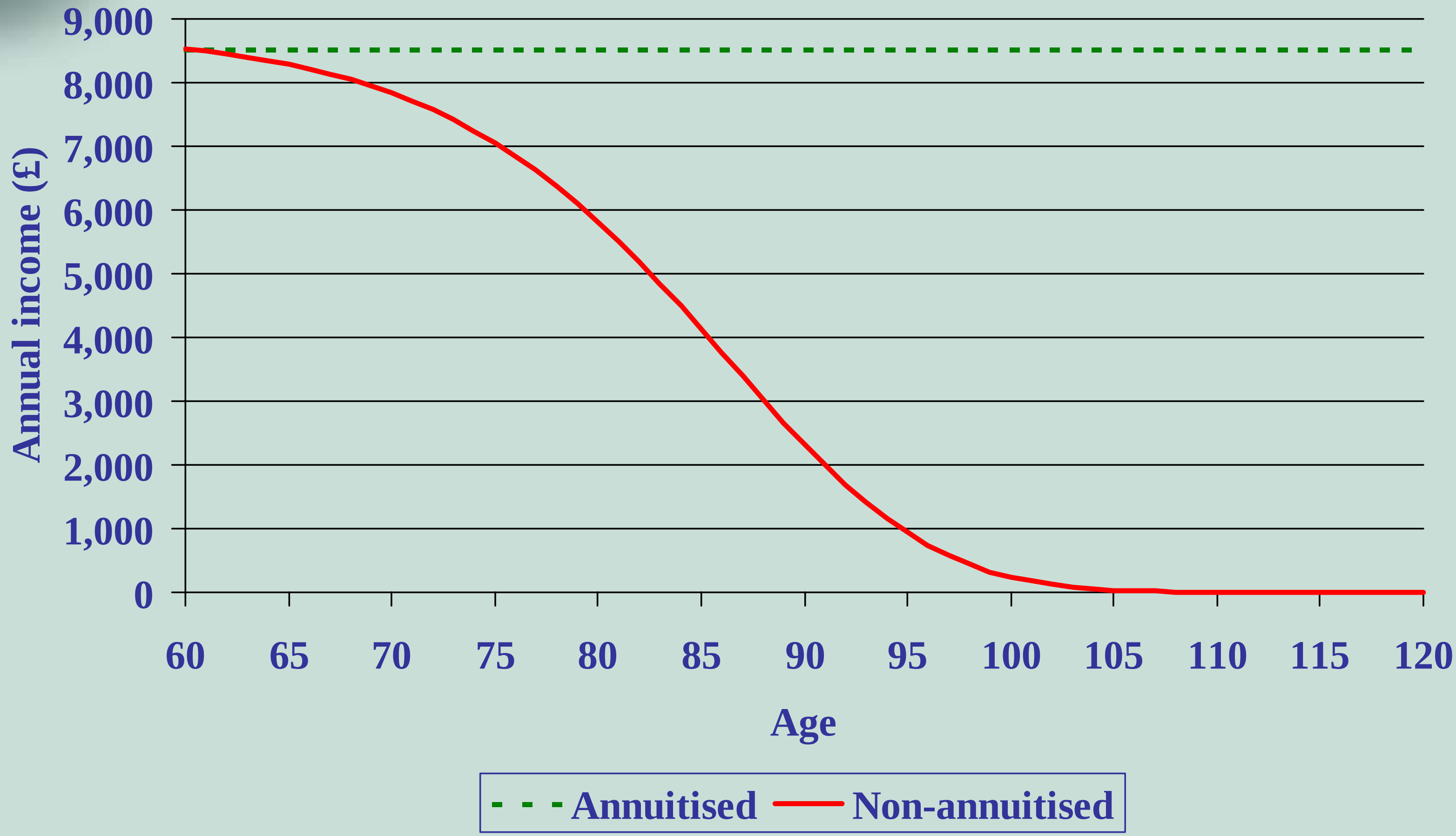
Investment return assumed: — **7% pa** — **0% pa** **(excl expenses)**

Investment return achieved: 7% pa **(excl expenses)**

Initial fund £100,000 Male aged 60 at outset

Mortality: PMA92 Year of use 2001

Progression of income - annuitised fund versus non-annuitised fund



Male aged 60 at outset

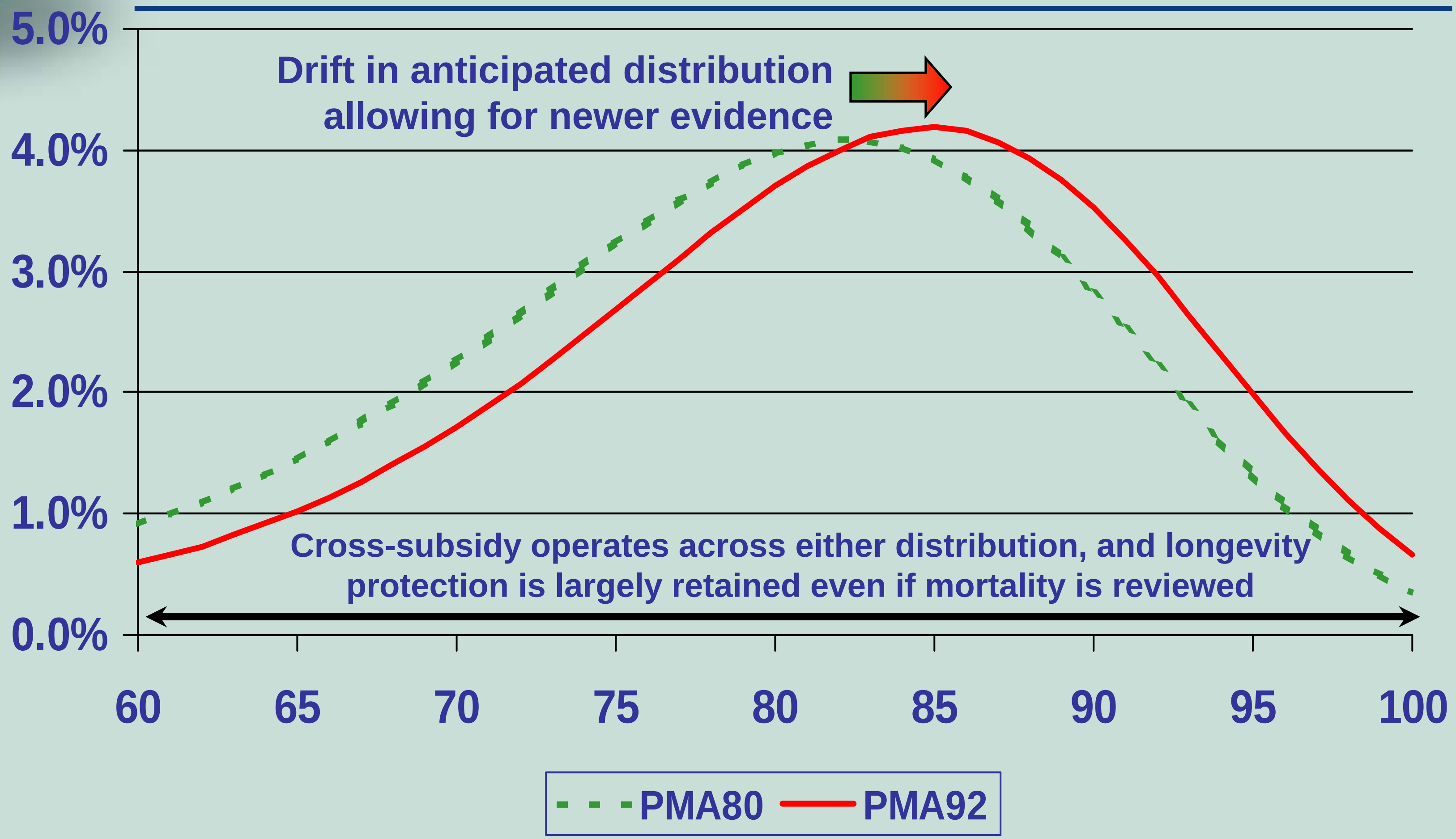
Mortality: PMA92 Year of use 2001

Supplier view of mortality guarantees

- Mortality improving
- How fast

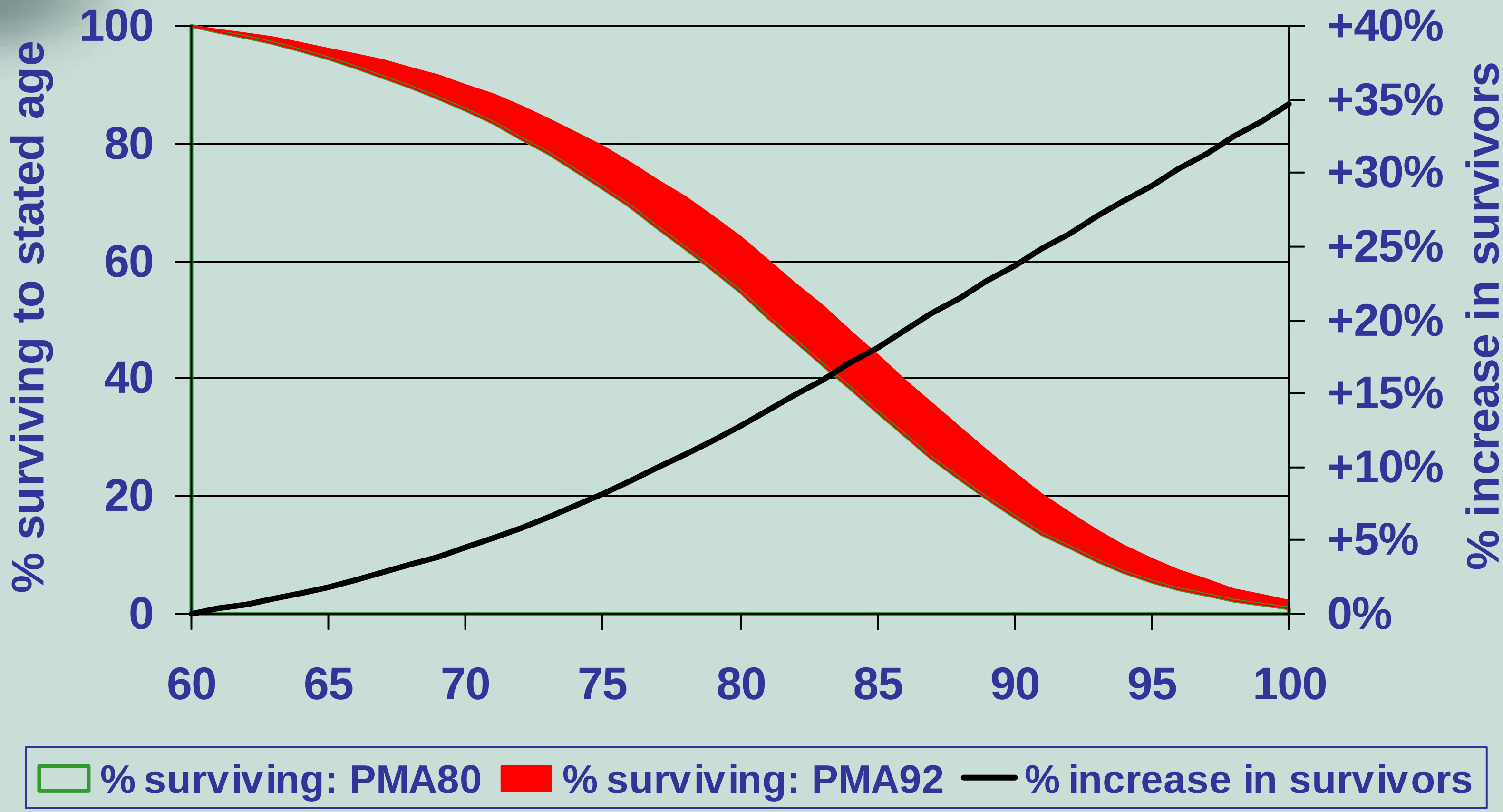
  1% pa? 2% pa? 3% pa?
- In future?
- Scope to review?
- Guarantees are (too) expensive?

Mortality drift - uncertain future improvements



Both charts show expected distribution of deaths for male aged 60 in 1992, allowing for future improvements. PMA92 represents the more recent estimate

Excess survivors - PMA92 compared with PMA80



Cost to annuity provider of not reviewing mortality relates to payments made to those survivors who were not expected to live so long - the red zone

New model

Investment fund

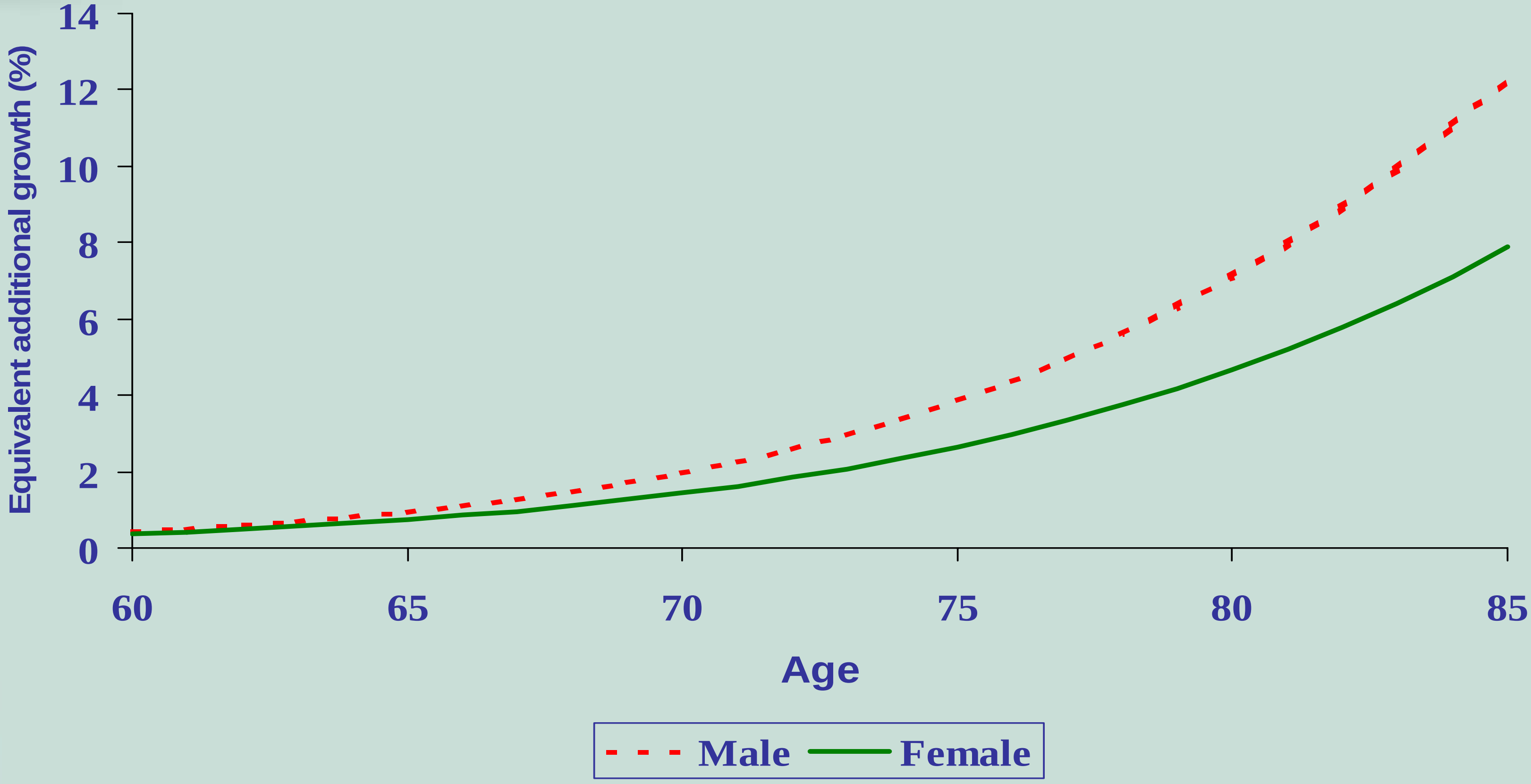
+

Insurance against survival

Lifetime income model - benefit statement

	Units	Unit Price £	Value £
Start of Year	10,000	10.00	100,000
Annuity Payments	**(975)**		**(10,000)**
Survival Bonus	295		3,000
Effect of Changes in Unit Price			4,860
End of Year	9,320	10.50	97,860
Target Income for Next Year			10,000

Equivalent additional fund growth resulting from mortality cross-subsidy



Mortality: PMA92/PFA92 Calendar Year 2001

Equivalent additional fund growth

	M % pa	F % pa
75	4.1	2.8
85	13.1	8.4
95	33.2	21.2

NB: Partial survival protection possible

Flexible annuity review cycle

Initial max/min income calc'd

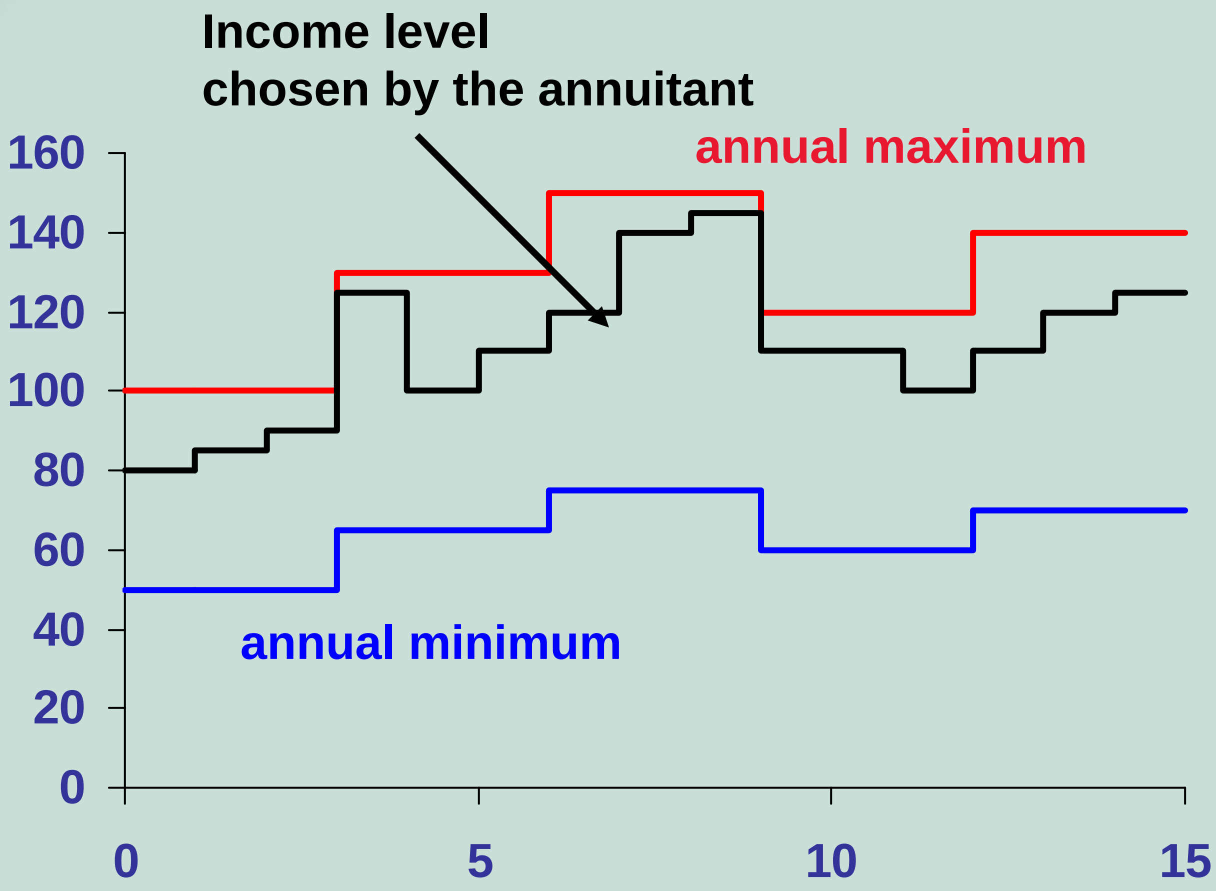
Annuitant selects income between max and min to next review

Payments deducted according to annuitant requirements/survival credits/investment returns added

Fund balance determined at review

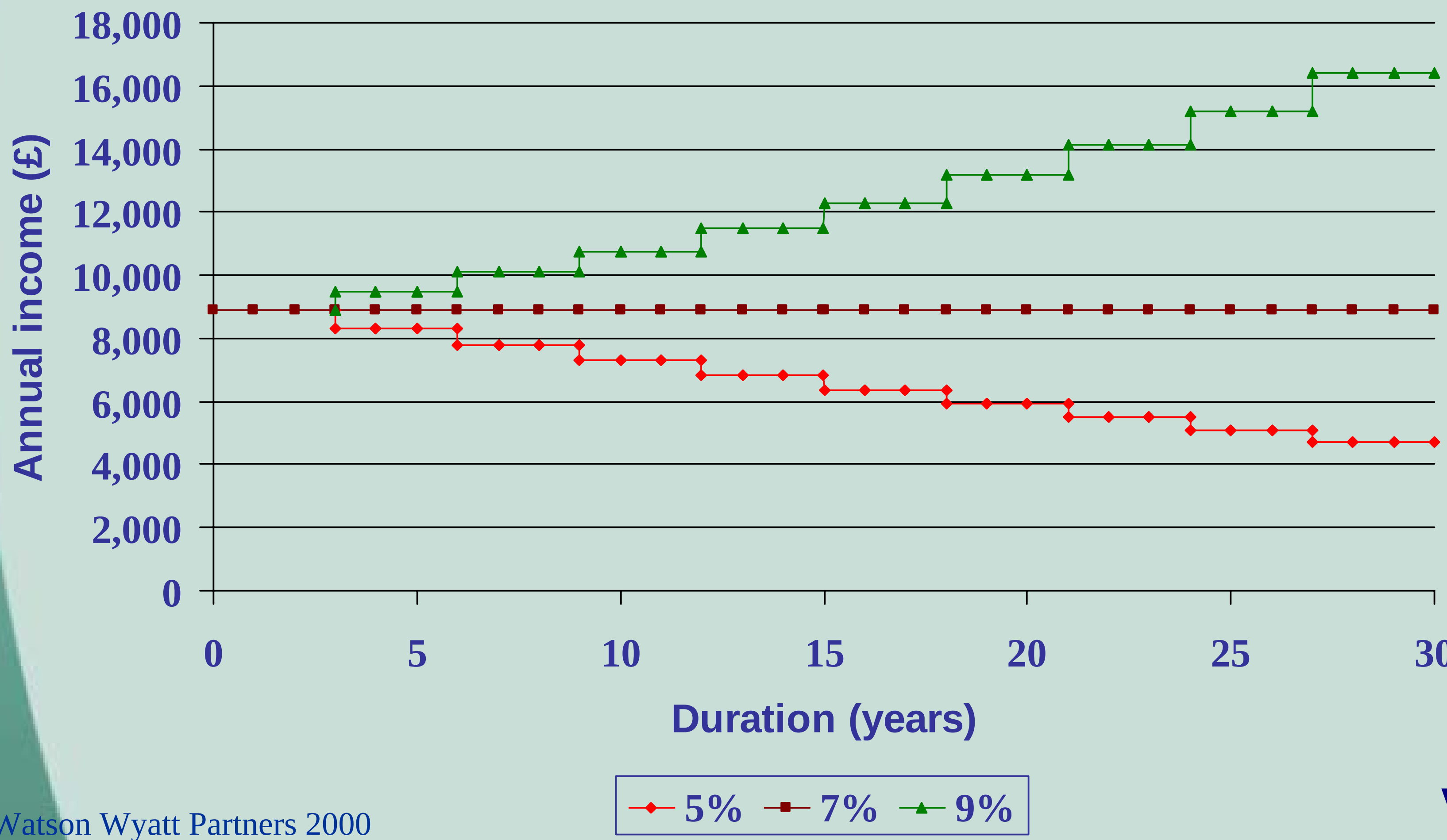
Max/min income to next review calc'd

Flexible income
The corridor



Communication of benefits

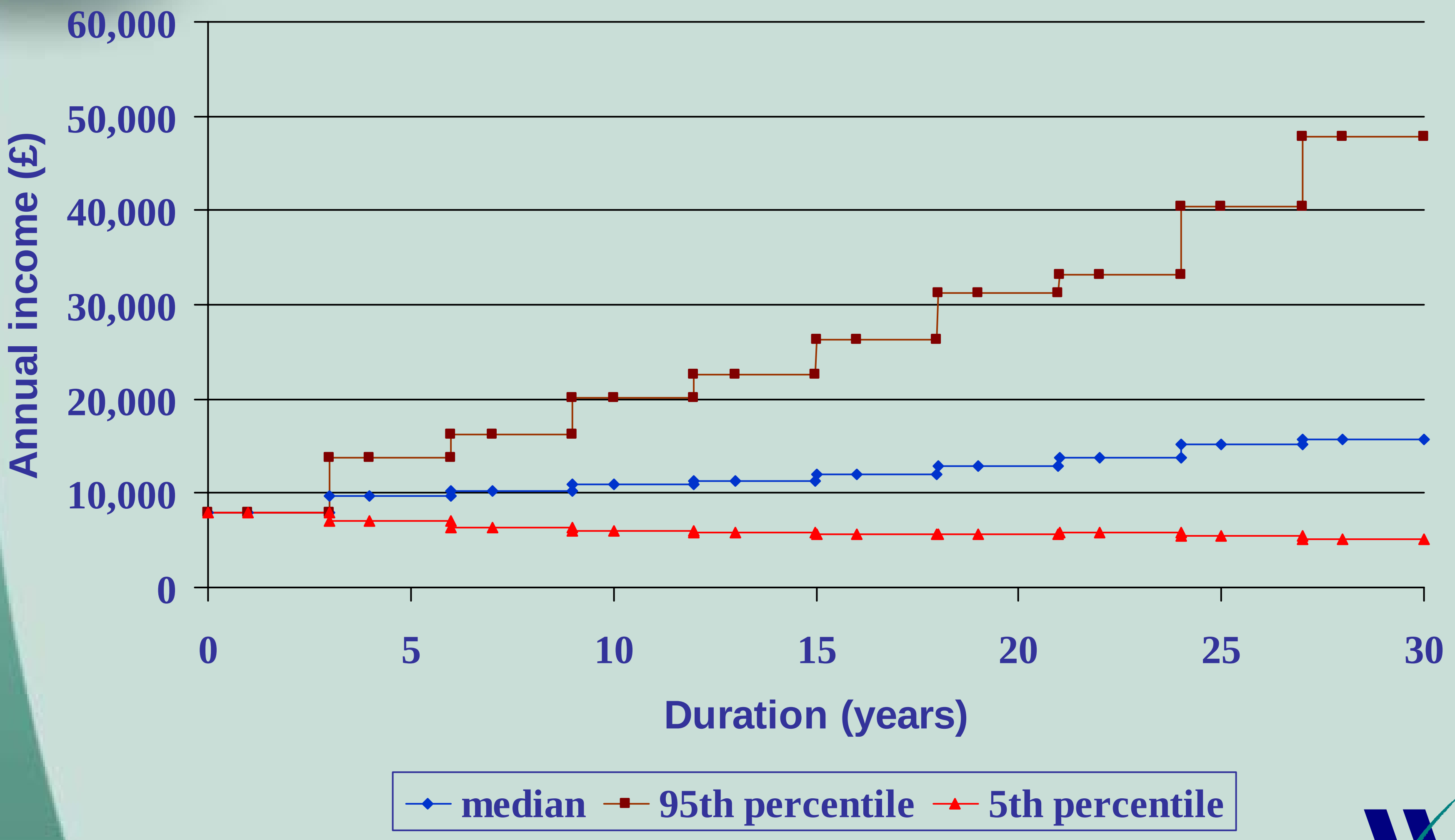
Income projections - income taken initially = income supportable at 7% pa



Income projections - income taken initially = 1.1 x income supportable at 7% pa

Income projections - income taken initially = 0.9 x income supportable at 7% pa

Income projections - variable investment model



Fail safe

- Default investment strategies, eg equities → bonds over lifetime
- Programmed switching to guarantee at high age
- Programmed switching to guarantee on sustained market fall, eg Japan scenario
- Voluntary switching

NB: More features → better systems

Annuity developments - unbundling dynamic

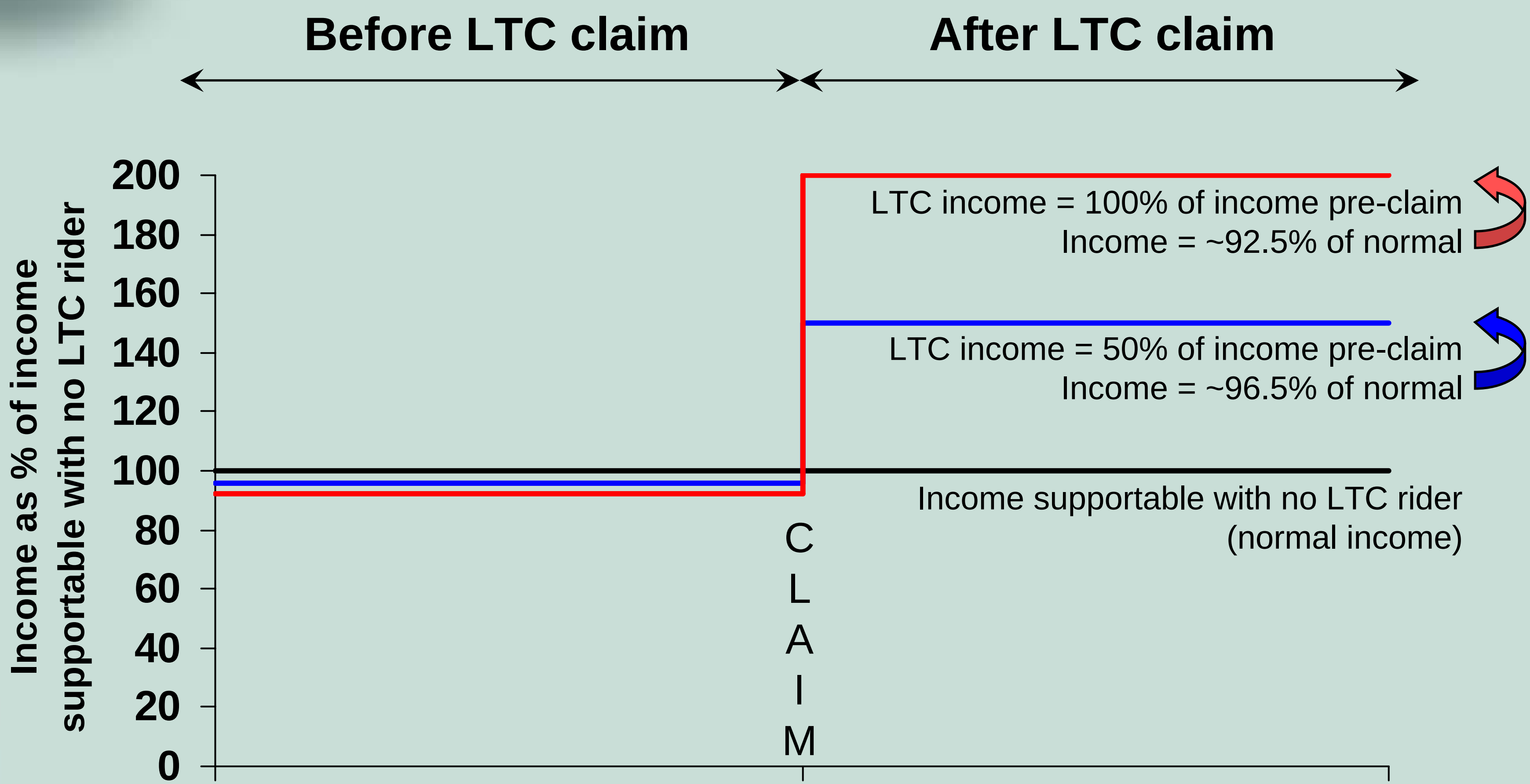
More impaired life/ enhanced annuities

Other g'teed annuities more expensive/less profitable

More equity based annuities

Weaker longevity guarantees

Effect of LTC rider on income



The product is a variable annuity prior to claim, then a fixed LTC annuity after claim, plus a continuing variable annuity (which could convert to a conventional annuity). The level of benefit is chosen by the insured.

Advantages of lifetime income model

- **Pensioners**
  - natural extension to DC pension vehicle
  - choose and vary asset allocation
  - flexibility of income
  - optimise income relative to risk
- **Insurers/fund managers**
  - longevity risk manageable
  - potential segmentation of risks
  - not restricted by available bond (or other) investments
  - global multi market application
- **Also financial planners/bond suppliers**

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