

Communicating Mortality Uncertainty to Pension Schemes and Trustees

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The Actuary's Problem

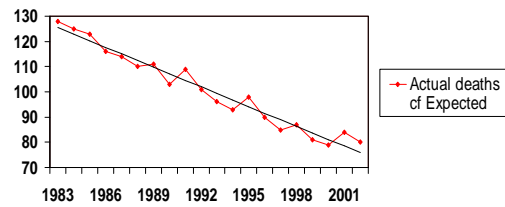
- What is current mortality
 - "Surely that's easy?"
- What about future improvements
 - "Why can't you actuaries get it right?"

Taking a snapshot is easy

- Drawing out the detail is the difficult bit
- Understanding is essential to be able to project
- What if the current picture is not representative?
- Sources of uncertainty
 - Blue/white collar mix
 - Low/high paid
 - Industrial variation
 - Regional variation

Variation in CMI male normal ret^t A/E

cf PMA 92 Base



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Fidelity Investments

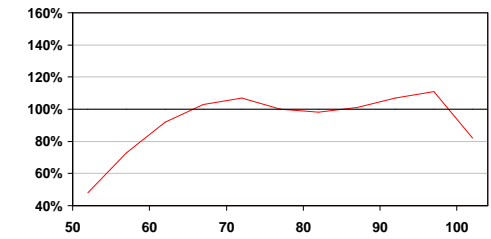
“Can’t you just use the standard tables?”

- “In a word – No”
- How do the “standard tables” compare with the experience of large occupational pension schemes?

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“00 series” v SAPS data 2000-2003

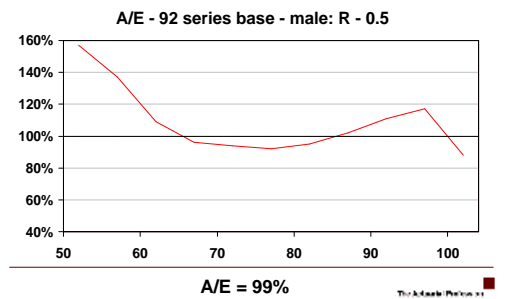
A/E - 00 series male normal: R +1



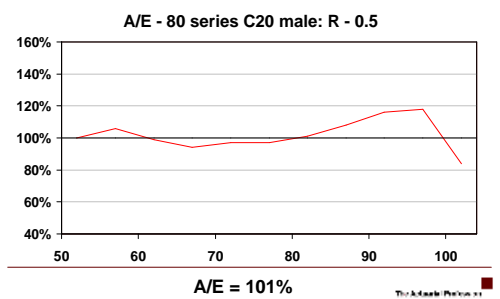
A/E = 99%

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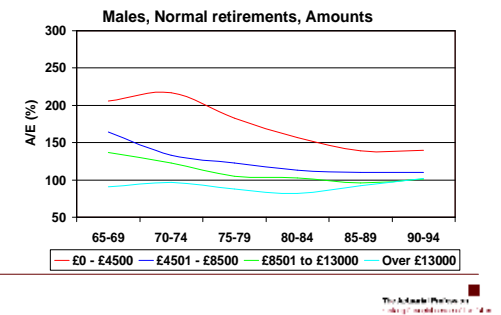
"92 series" v SAPS data 2000-2003

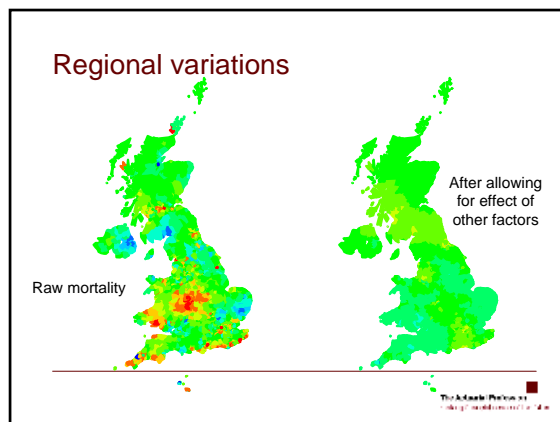


"80 series" v SAPS data 2000-2003



Variation by amount – SAPS data





Variation by industry – SAPS data

	Average Pension pa	A/E 92 series (%) Lives 60+	Amounts 60+
Basic Industries	£4,390	114	124
General Industries	£4,410	93	96
Cyclical Services	£6,670	103	109
Info. Technology	£8,220	99	110
Financials	£13,330	90	96

The Actuary's Pension
making pensions work for all

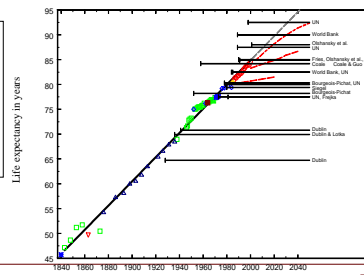
- ### “So where are we going then?”
- Experts differ
 - Cohort effect
 - Trend uncertainty
- The Actuary's Pension
making pensions work for all

Will mortality continue to improve? Expert No. 1

Professor James Vaupel
Institute of Demographic
Research, Rostock, Germany

Vaupel believes that mortality will continue to improve at its current rate. His principal argument is that future improvements and (currently unknown) developments in medical science will reverse ageing.

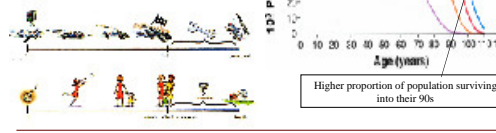
Life expectancy shown is for the "best" country in the world at that time



Will mortality continue to improve? Expert No. 2

Professor Jay Olshansky
University of Illinois, Chicago

Olshansky argues that mortality will not continue to improve at its current rate. The main reasons he gives are obesity, the spread of disease and, most importantly, the existence of biomechanical limits on our lifespan.



Will mortality continue to improve? More experts

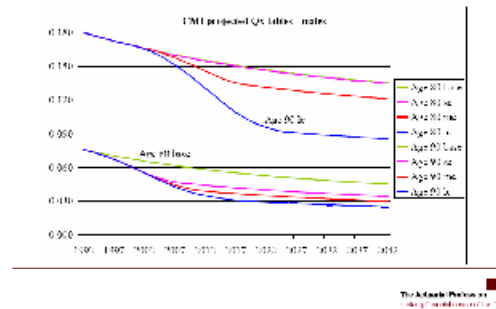
- Professor Tom Kirkwood
 - There is no strict biological program for ageing and no limit to the length of human life
- Dr Aubrey de Grey
 - I think the first person to live to 1,000 might be 60 already

The Cohort Effect

- Trustees surprised at extent and duration of the cohort effect
 - Illustrate the past
 - Perhaps show charts of projections
 - Consider single age – 80 is good
 - Comment on uncertainty as to how long it will continue

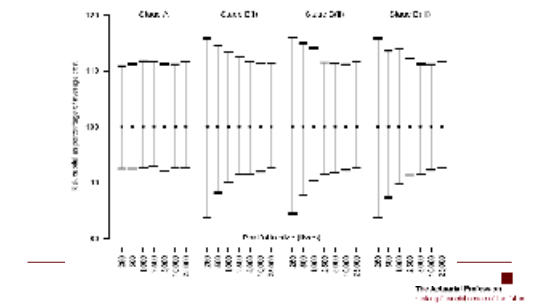
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Patterns of improvement - q_x



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Uncertainty – CMI model - CMIR 15 Sample annuity portfolio - reserving



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