



# CMI Mortality Investigations

London

26 April 2007

# CMI Mortality Investigations

- Life Office Mortality Investigations

*Dave Grimshaw*

- Self-Administered Pensions Mortality Investigation

*Brian Wilson*

- Mortality Projections

*Dave Grimshaw*

# Life Office Mortality Investigations: Agenda

- “00” Series tables
- Extension of pensioner tables to younger ages
- Subsequent experience
- ‘Per Policy’ data

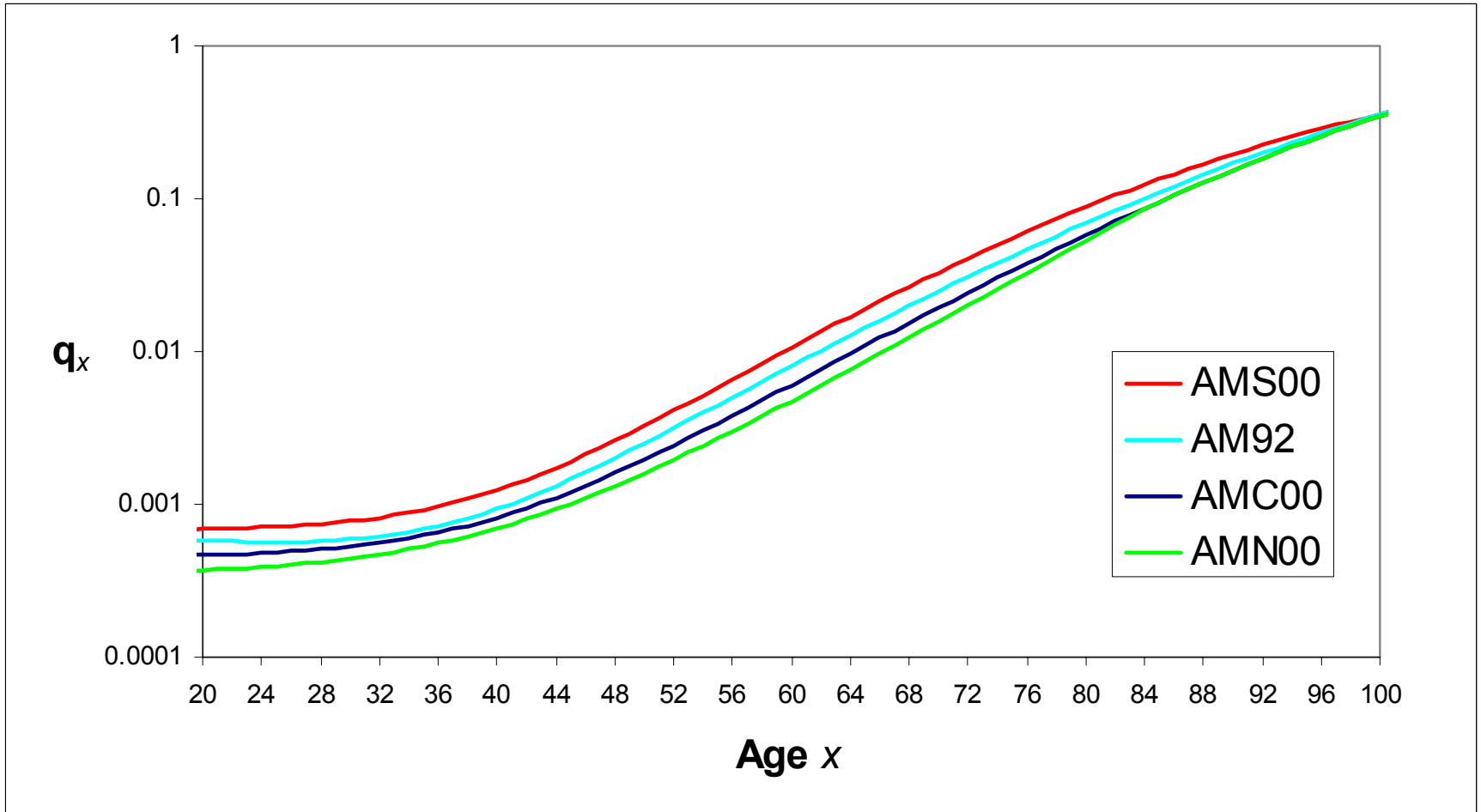
# “00” Series - Chronology

- WP8 (May 2004) – initial findings
- WP12 (Apr 2005) – assured lives proposals
- WP16 (Sep 2005) – annuitant/pensioner proposals
- WP21/22 (Jul 2006) – final tables, adopted 1 Sep 2006
- WP26 (Apr 2007) – Early/Combined pensioner extensions to young ages

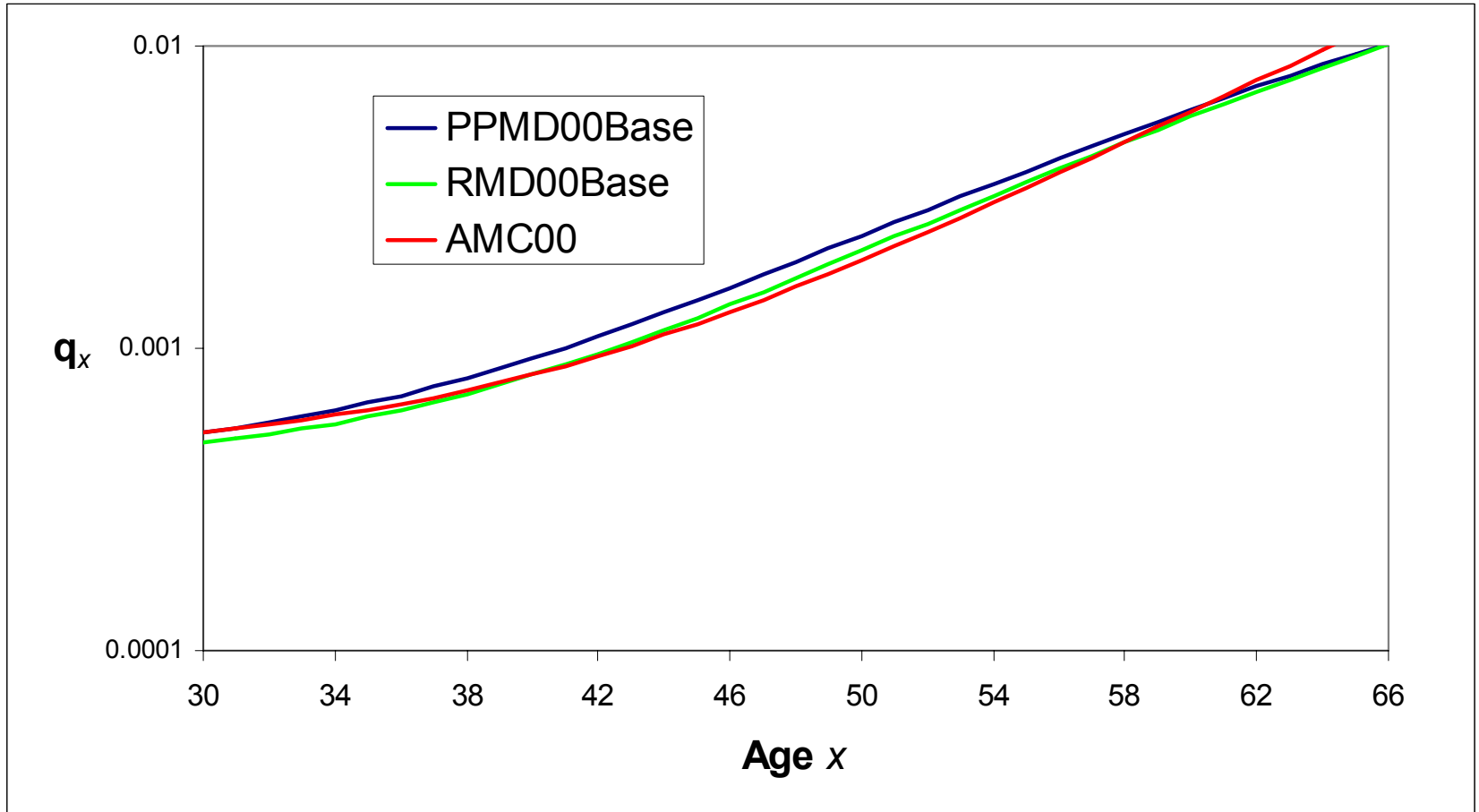
# “00” Series base tables

- AM00 & AF00, 2 year select ) Combined, Smoker
- TM00 & TF00, 5 year select ) & non-smoker
- PMA, PML, PFA, PFL
  - Normal, Early, Combined
- PPM,PPF (new, lives only)
  - Vested, Deferred, Combined
- IML, IFL (No amounts this time, funny data)
- WA, WL
- RM, RF (lives only, as before)
  - Vested, Deferred (new), Combined (new)

# New "00" Series tables: smoker status

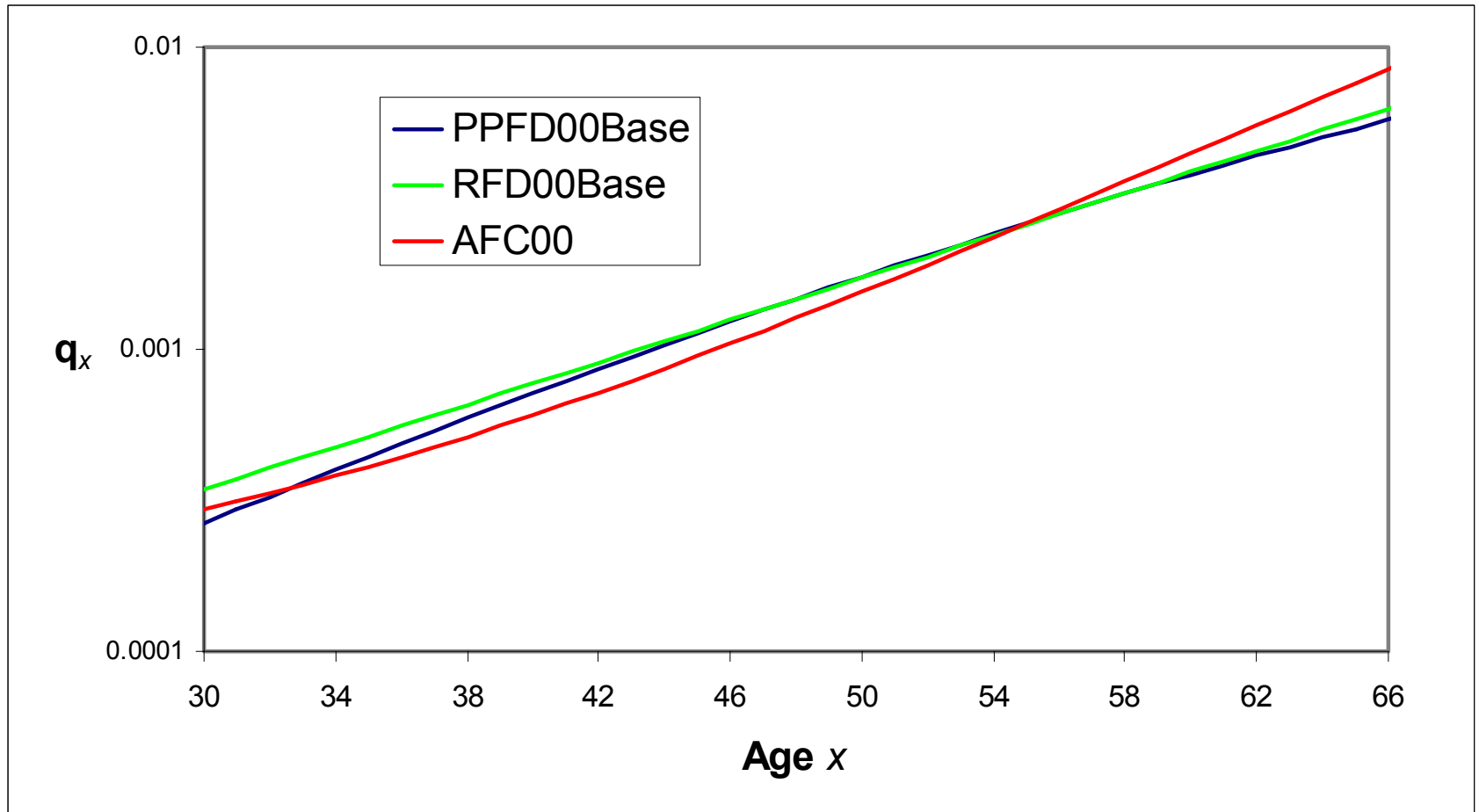


# “00” Series tables: Personal Pensions



Personal Pensions in deferment, Males

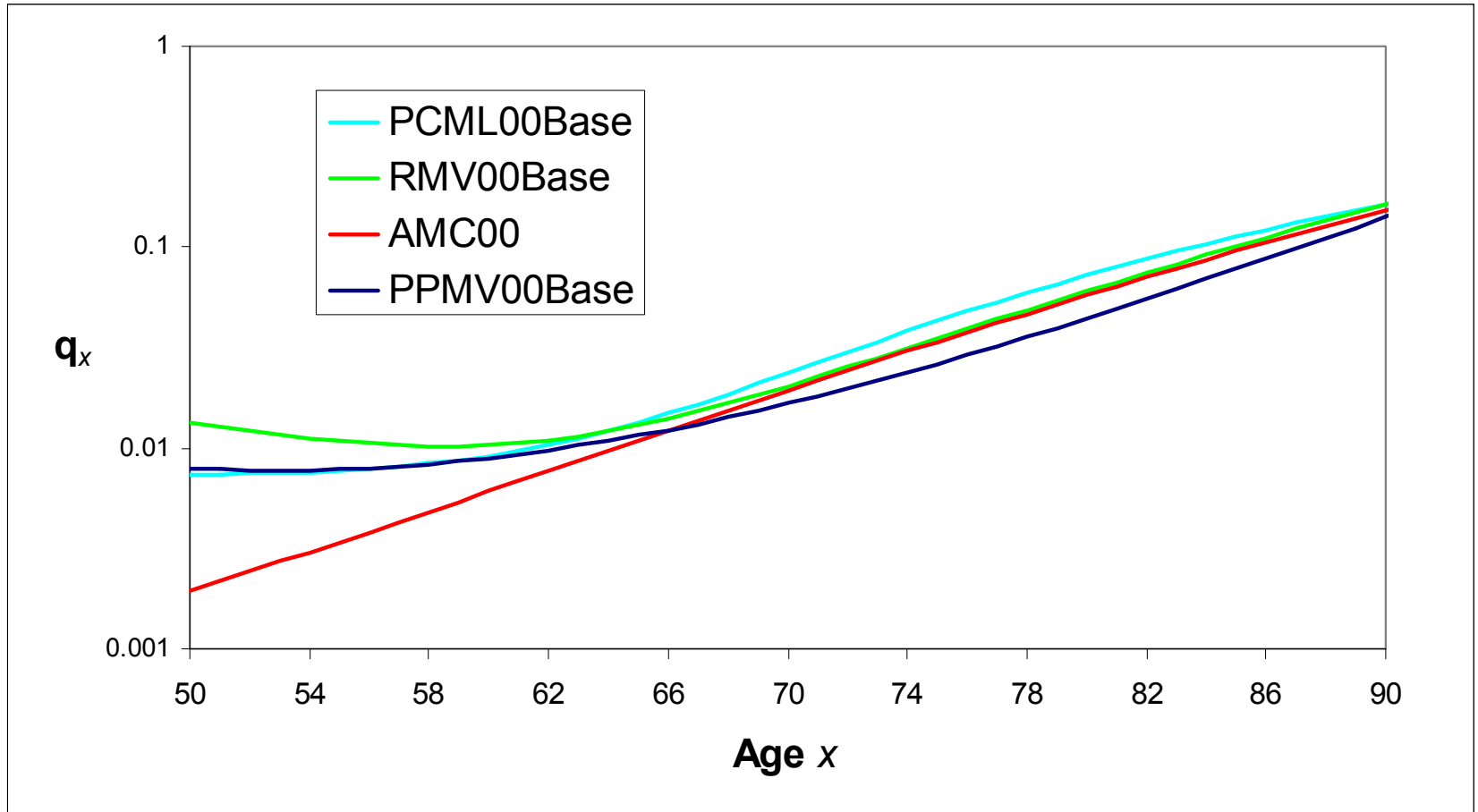
# “00” Series tables: Personal Pensions



Personal Pensions in deferment, Females



# “00” Series tables: Personal Pensions



# Extension of Pensioner tables to younger ages

- Draft “00” Series rates for pensioners started at age 50
  - Low data volumes at the younger ages
  - Tables were a good fit to data for ages 51-65
- Feedback - need for rates to be extended down to younger ages.
- Final “00” Series tables for Normal retirements started at age 20
  - Based on blend to assured lives mortality at young ages
  - Amended rates ages 51-65 – no longer fit data
- “00” Series rates for Early and Combined retirements still commenced at 50
- Working Paper 26 suggests possible extensions down to age 20
  - Other approaches may also be equally appropriate
  - The CMI is not seeking approval for these rates from the Profession

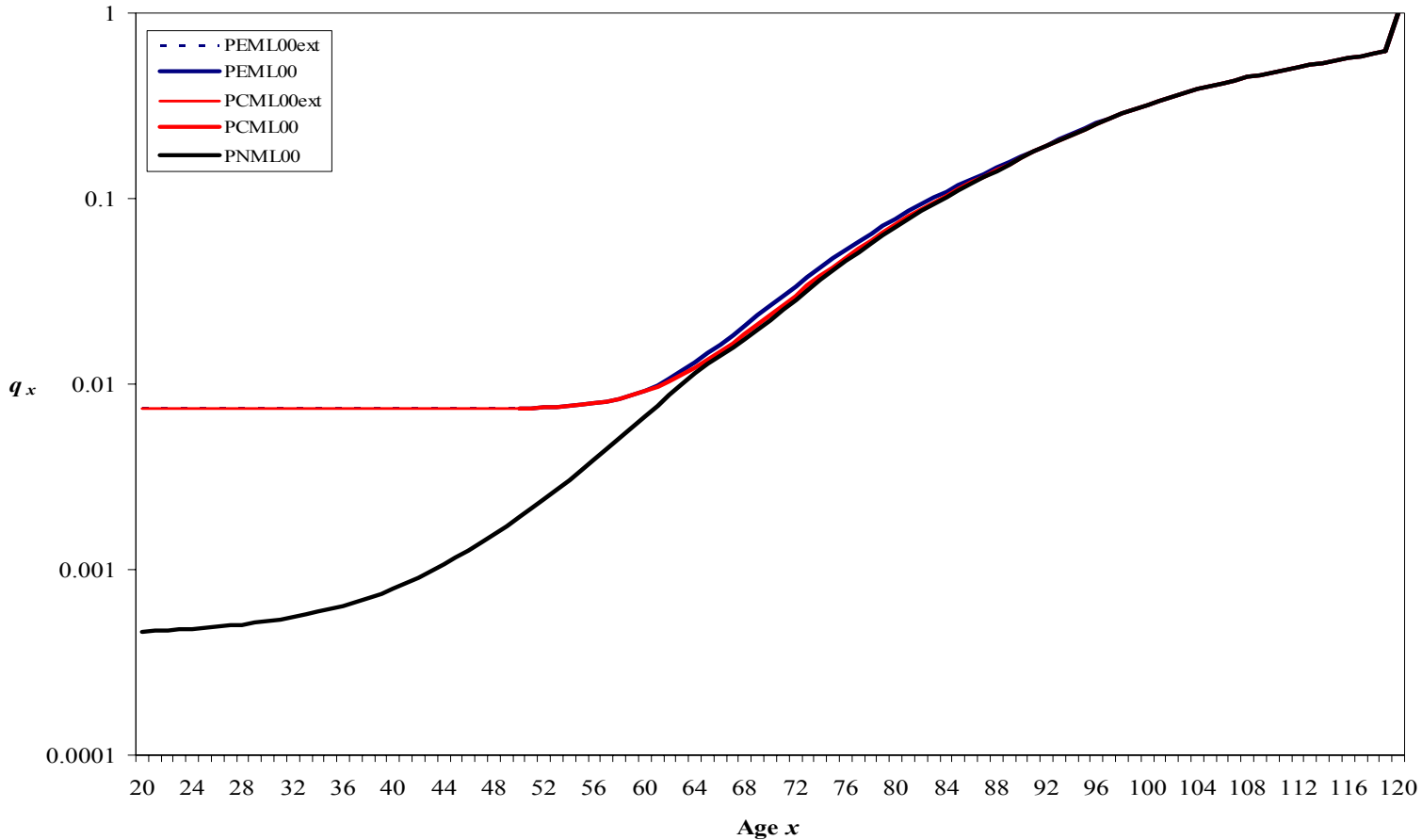
# Extension of Pensioner tables: low data volumes

	Normals		Earlies	
Ages	Actual Deaths	Expected Deaths	Actual Deaths	Expected Deaths
21-50	36	5	55	44
51-100	53,450	53,517	20,181	20,243

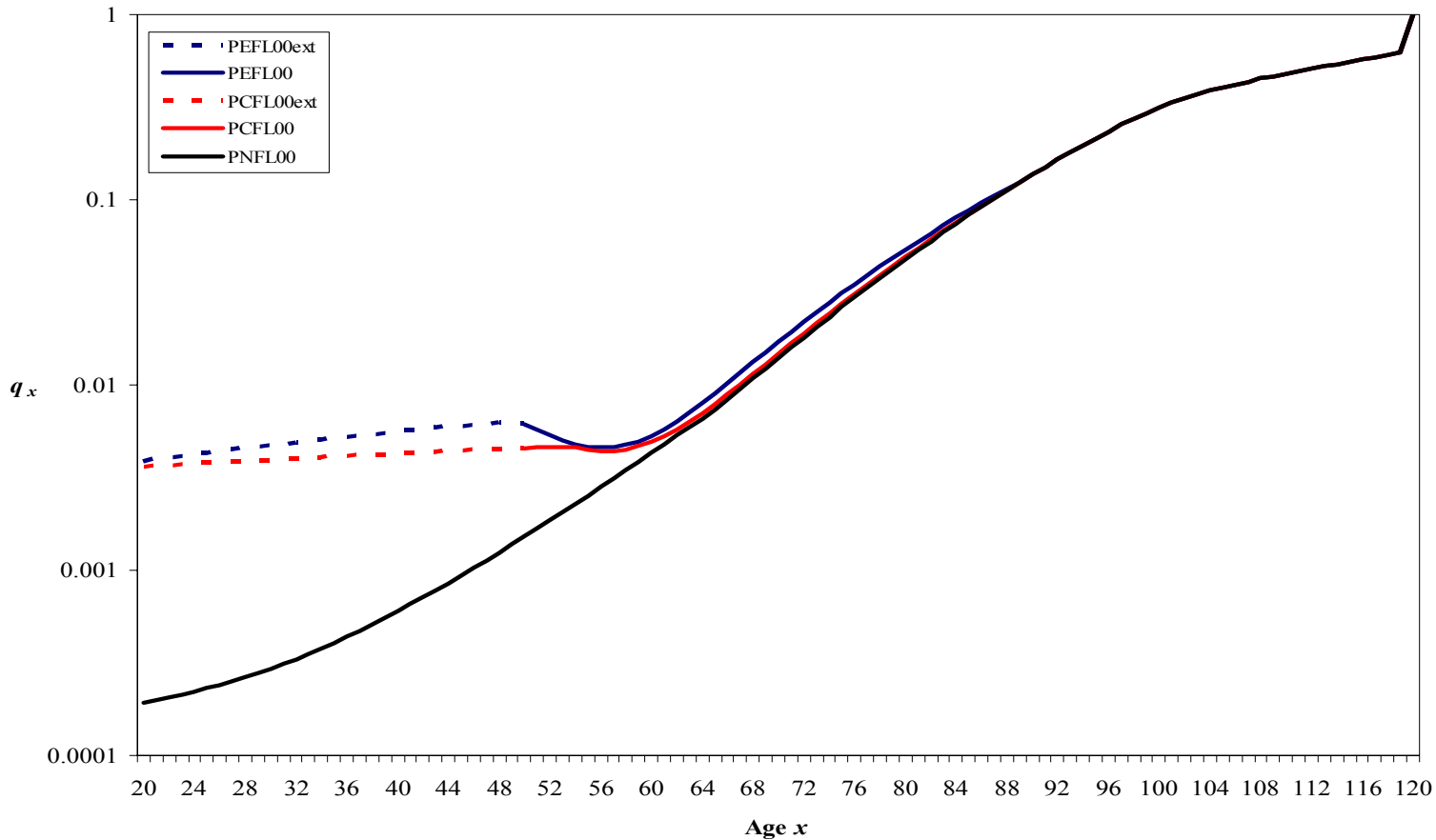
Normals compared to PNML00

Earlies compared to extended table

# PNML00 and extensions to younger ages



# PNFL00 and extensions to younger ages



# “00” Extensions - Comments

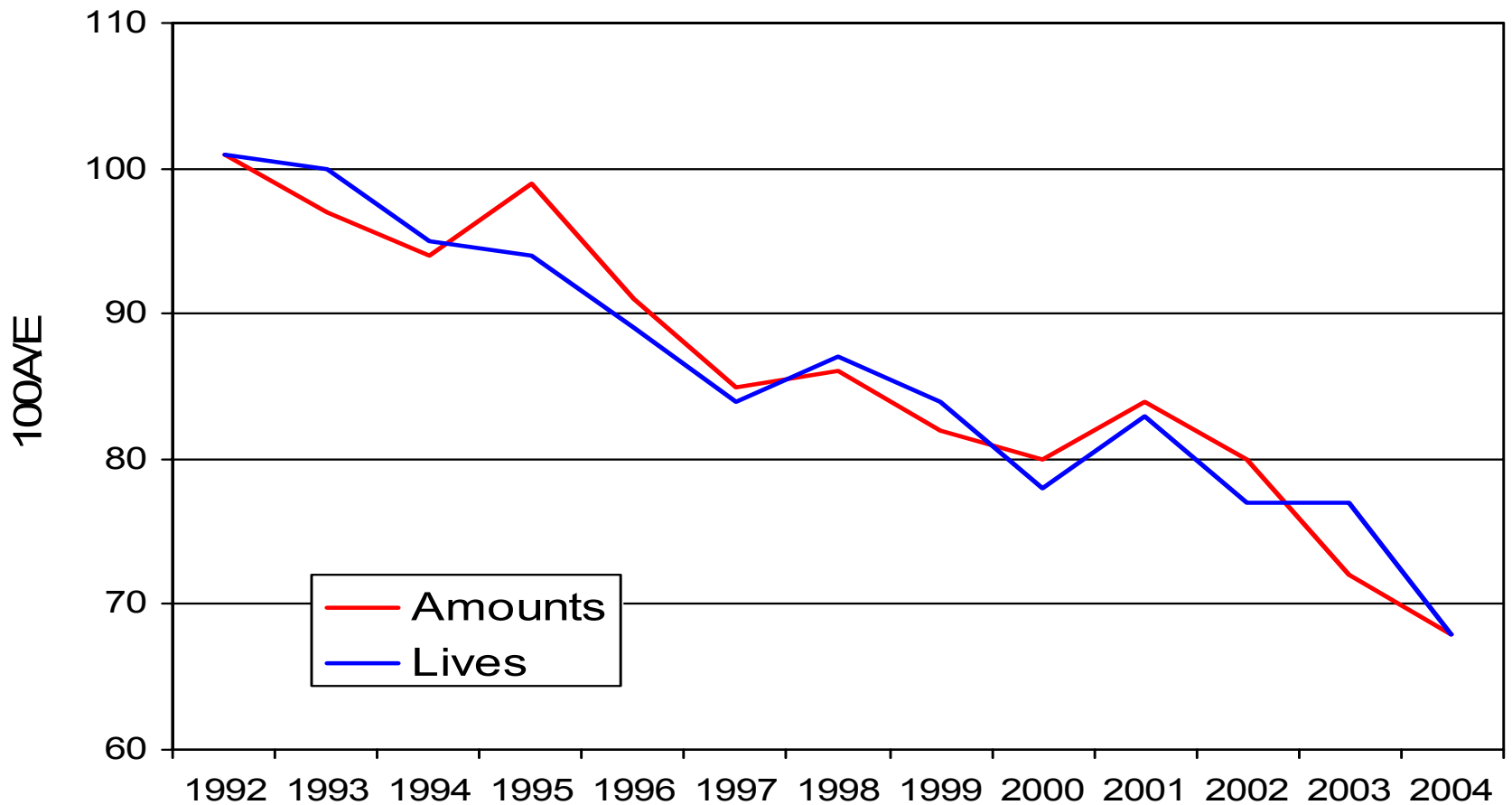
- Not officially adopted
- Other approaches equally valid
- Responsibility rests with actuary
- Normals assume ‘healthy’ lives...
- ... so don’t fit data!
- Combined/Early may be more appropriate where pensioners are not all “healthy”

# Experience subsequent to “00”

- Results released to members for 2003 and 2004
- Assured lives data to 2004 also made available with software
- 2005 data collection nearly complete...

# Experience subsequent to “00”

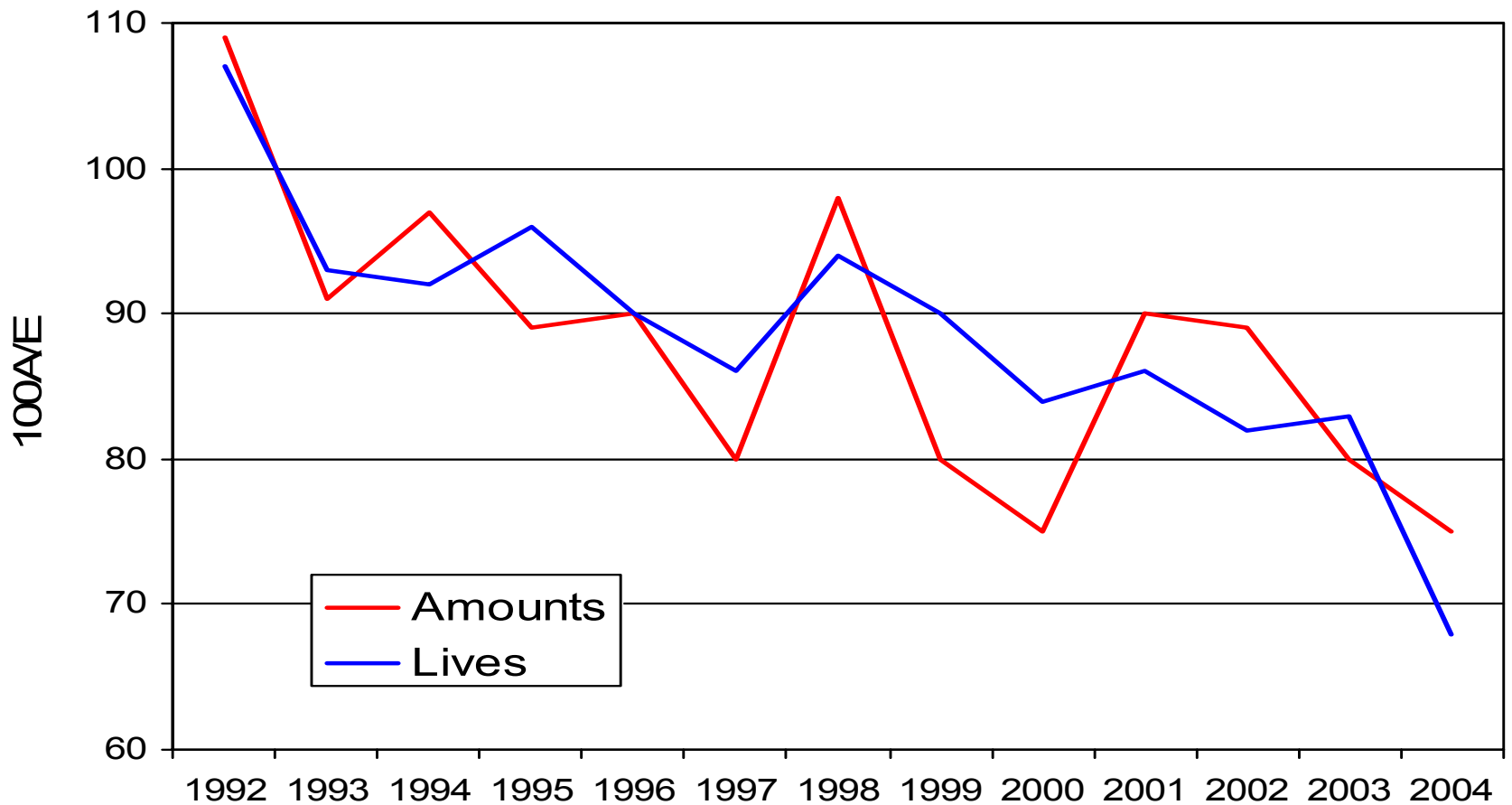
Male Life Office Pensioners 100A/E, E= “92” Series mortality rates, Normals





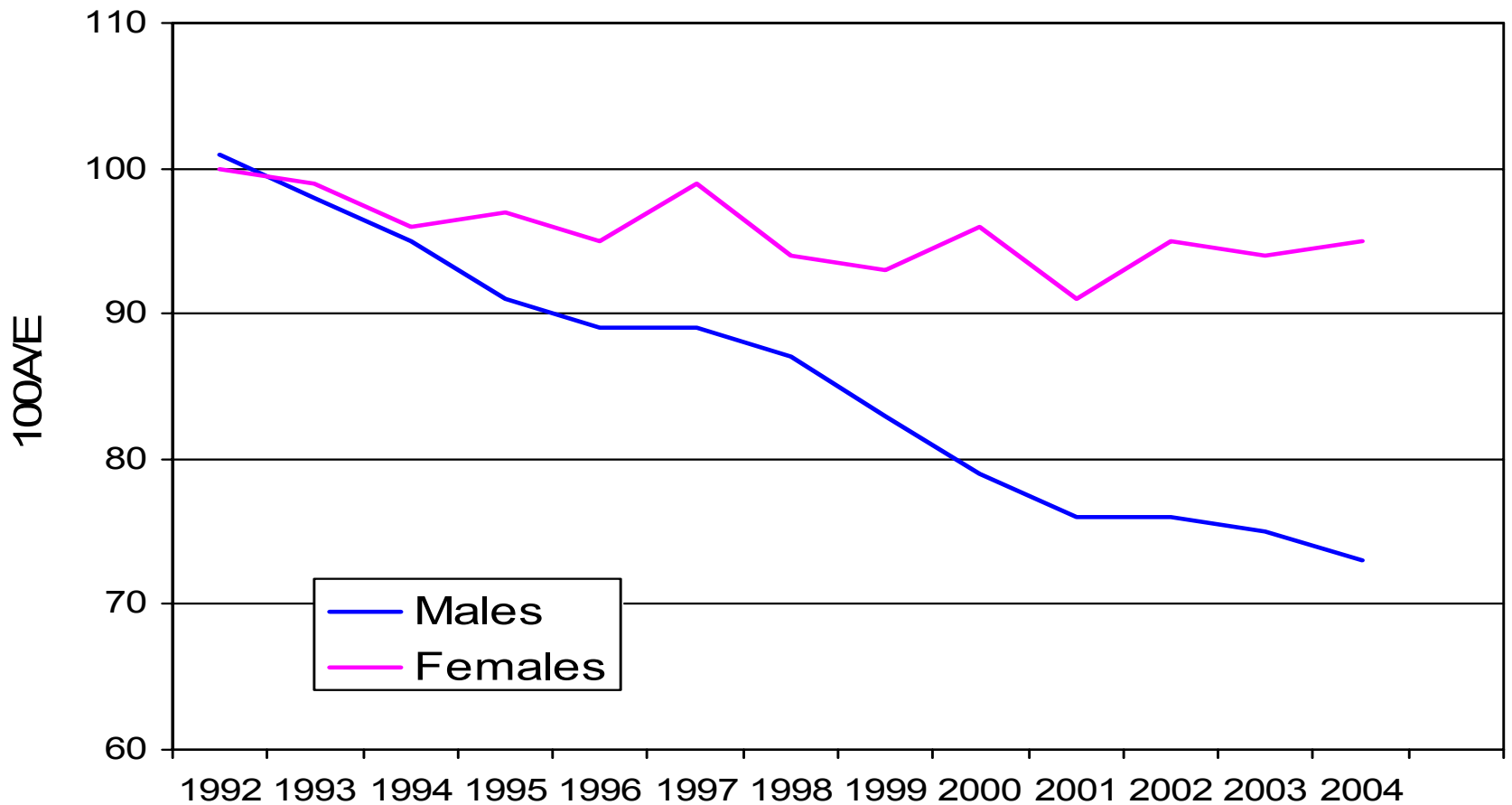
# Experience subsequent to “00”

Female Life Office Pensioners 100A/E, E= “92” Series mortality rates, Normals



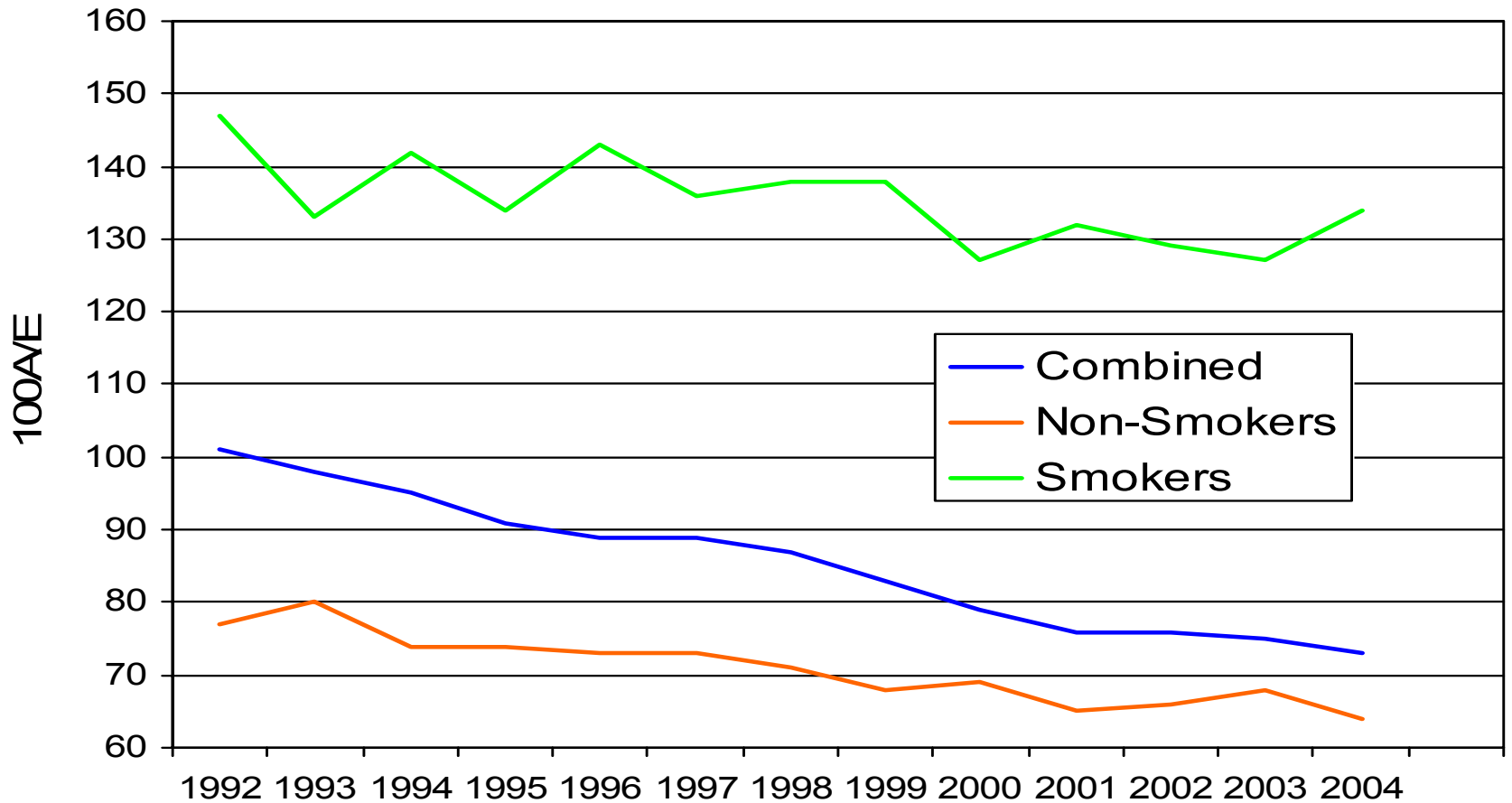
# Experience subsequent to "00"

Assured Lives 100A/E, E= "92" Series mortality rates



# Experience subsequent to "00"

Assured Lives 100A/E, E= "92" Series mortality rates, Males



# Experience subsequent to “00”

- Male experience has continued to improve to 2004
- Female experience appears to have improved for Life Office Pensioners, not so for Assured lives
- Improvement 2003 -> 2004 particularly pronounced...
- ... may have impact on projections
- Improvements on Assured Lives at least partially explained by changes in prevalence of smoking
- Individual year results vulnerable to changing mix of offices

# 'Per Policy' initiative

- Background
- Objectives
- Key Differences:
  - Day Count
  - Central Exposures
  - Investigation codes
  - Additional data fields
- Timetable

# Background to the Per Policy initiative

- Mortality investigation collects “Scheduled” data:

**Male, Non-smoker, Whole Life & Endowment**  
**Duration**

<b>Age</b>	<b>0</b>	<b>1</b>	<b>2+</b>
<b>30</b>	<b>34</b>	<b>29</b>	<b>231</b>
<b>31</b>	<b>37</b>	<b>31</b>	<b>301, etc.</b>

- Not easily supplied => falling data volumes
- Limited validation / verification
- Current systems developed in 1980's
- Rigid outputs

# Objectives

- To make data submission easier
- ... to increase data volumes
- To capture additional data items
- ... to produce more valuable analyses
- To increase data validation and verification
- To increase flexibility (input and output)
- To replace the current Mortality systems

# Key Differences: Day Count / Central Exposures

- No longer proposing a 'Census' approach:
  - End-year data submission now includes all 'offs' and 'date of exit'
  - Date of entry included
  - Allows more accurate calculation of exposure
  - Excludes periods where policies are 'off-risk'
- Will seek to provide comparison to 'Census' approach



# Key Differences: Claim Notification

- Previously offices asked to wait 6 months so virtually all claims notified
- Now, claims submitted according to processing date
  - Delayed claims reported in subsequent years
  - Less delay in submitting data
  - No claims missed
  - Adjustment needed for IBNS

# Key Differences: Investigation codes

- Mortality investigation currently has fixed “Investigation Codes”, e.g. 01=Whole Life & Endowment
- Difficult to start new investigations or combine existing ones
- Difficult to know whether offices are submitting data to the right investigation
- CI already uses “Product Code” :
  - Office tells us their product name or code
  - Office supplies product information
  - CMI decides how to segment the analyses
- Asking offices to advise previous investigation number

# Key Differences: Additional data fields

## Improved analysis

- Amounts data
- Postcode
- Policy Duration
- Distribution Channel
- Type of Entry
- Dates of Claim

## Increased data validation

- Client Identifier
- Type of Entry
- Type of increment/decrement
- ABI New Business Code
- Validation across years

# 'Per Policy' Timetable

**2002** : CMI surveyed offices on feasibility - encouraging response

**2005** :

- April - draft Coding Guide issued (Working Paper 13) for consultation
- October – first Per Policy data submission received!
- December - Working Paper 19 published, including revised Coding Guide covering both Mortality and CI

**2006** :

- Systems design/development commenced
- Several further data submissions from offices
- Expected that most will adopt for 2005 or 2006 data
- 2006 investigation year is last will accept scheduled data for mortality

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