The Actuarial Profession
making financial sense of the future

UK Asbestos Working Party Update 2009

Brian Gravelsons
Matthew Wilde
Robert Brooks
Charlie Kefford
Andy Whiting

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Working Party Members

Andy Whiting

Brian Gravelsons

Charlie Kefford

Dan Beard

Dan Sykes

Darren Michaels

Emiliano Ruffini

Graham Sandhouse

Gregory Overton

Jerome Schilling

John Wilson

Matthew Wilde

Matthew Ball

Naomi Couchman

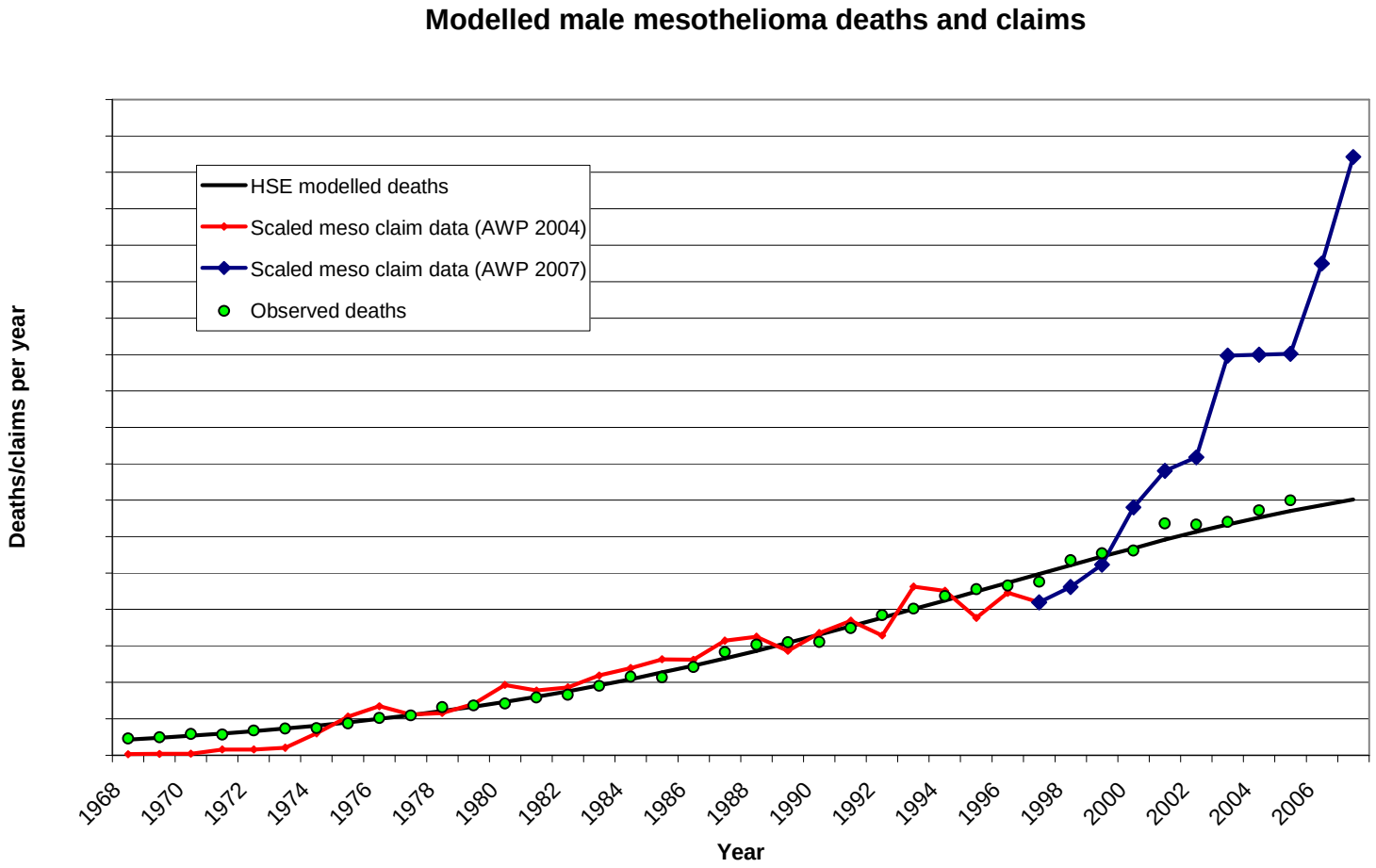
Patrick Nolan

Peter Taylor

Robert Brooks

Stephen Robertson-Dunn

Introduction – Recap of 2008 Workshop



Working Party Plans for 2008/9

- Understand revised future population projection of deaths due to mesothelioma by the HSE / Peto and update working party model if appropriate.
- Further explore key drivers of claims to deaths ratio.
- Develop average cost per claim model.
- Update UK insurance industry estimates for asbestos-related claims.

Content

- Mesothelioma population deaths projections
- Claimant to deaths ratio
- Mesothelioma average cost per claim model
- Insurance industry mesothelioma projections
- Insurance industry non -mesothelioma projections

ALL FIGURES PRESENTED IN THIS WORKSHOP ARE DRAFT - FINAL ESTIMATES WILL BE PUBLISHED IN OUR PAPER LATER THIS YEAR

Mesothelioma Deaths' Projections

- AWP considered three model structures:

  Latency Model

  Simple Birth Cohort Model

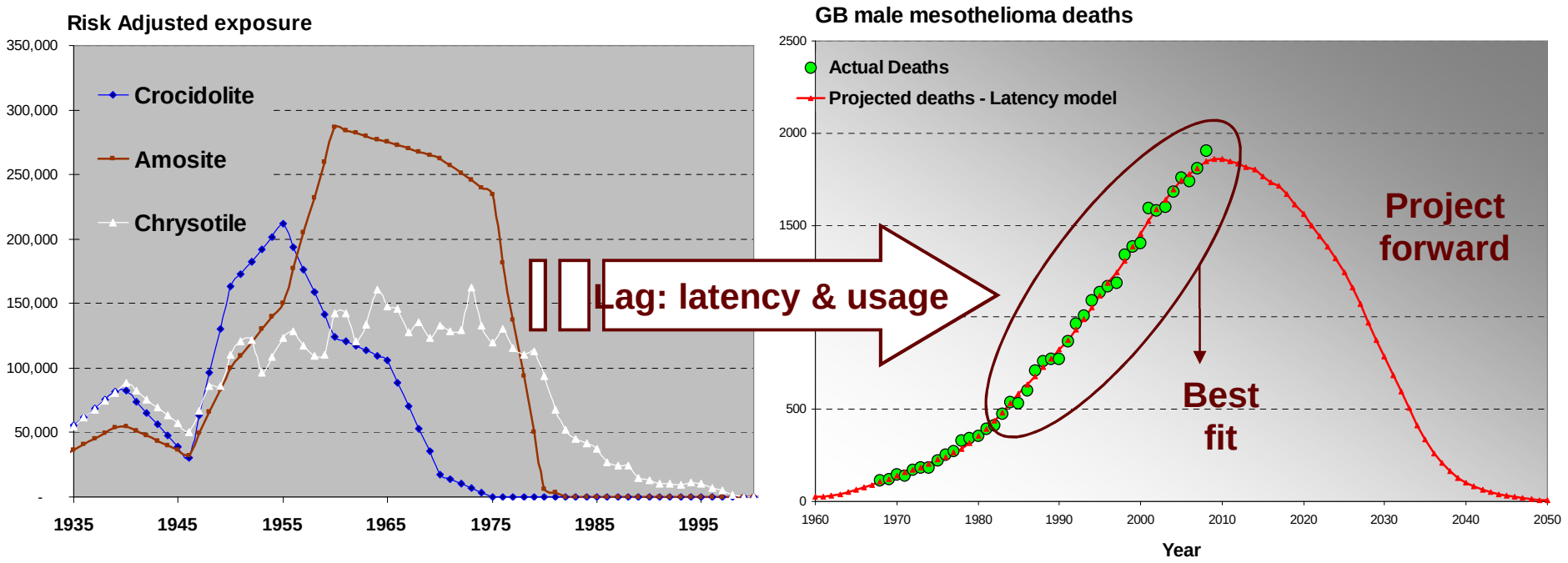
  HSE/HSL Model

- The three models are summarised as follows:

Latency Model

Past Import Data and assumed ‘risk’ relativities

Create ‘index’ for propensity to develop mesothelioma



Latency Model

Advantages:

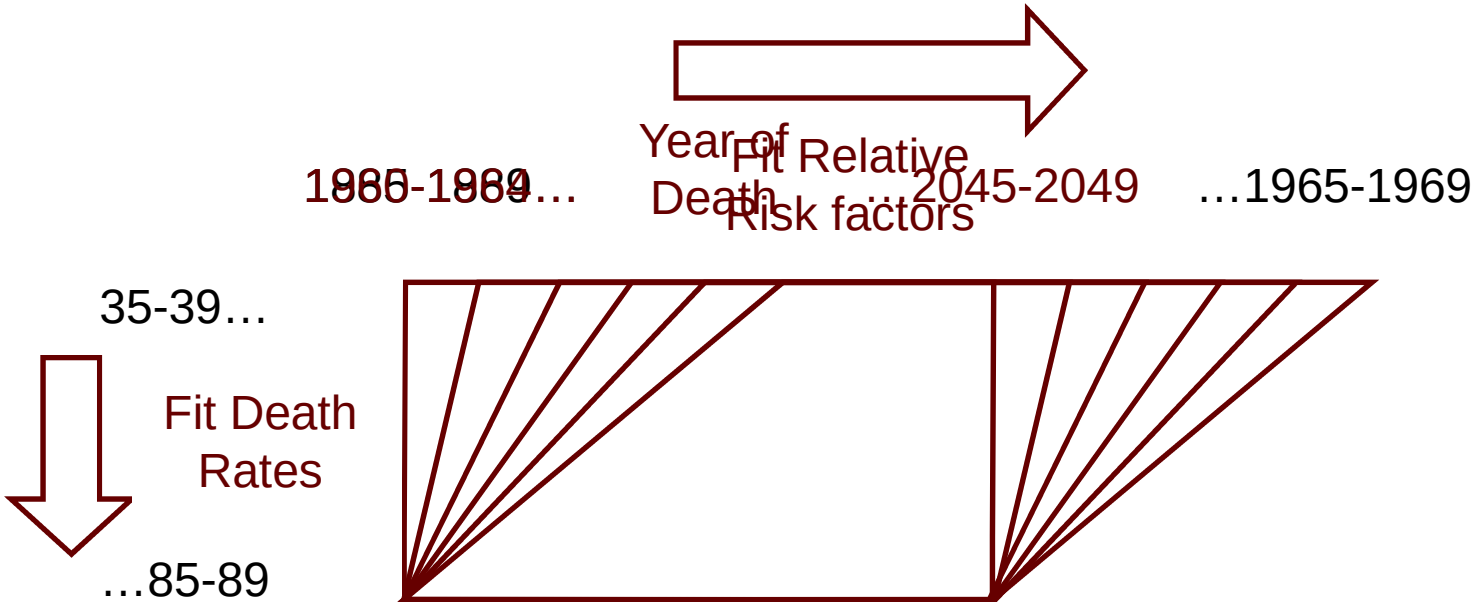
- common sense approach
- ‘real-world’ inputs
- can achieve a good fit

Disadvantages:

- projection very sensitive to inputs
- …and key assumption choices very subjective
- implicit population assumption

Simple Birth Cohort Model

- analyse age-specific death rates
- by birth cohort



Simple Birth Cohort Model

Advantages:

- simple structure
- allows for relative differences between YOB cohorts

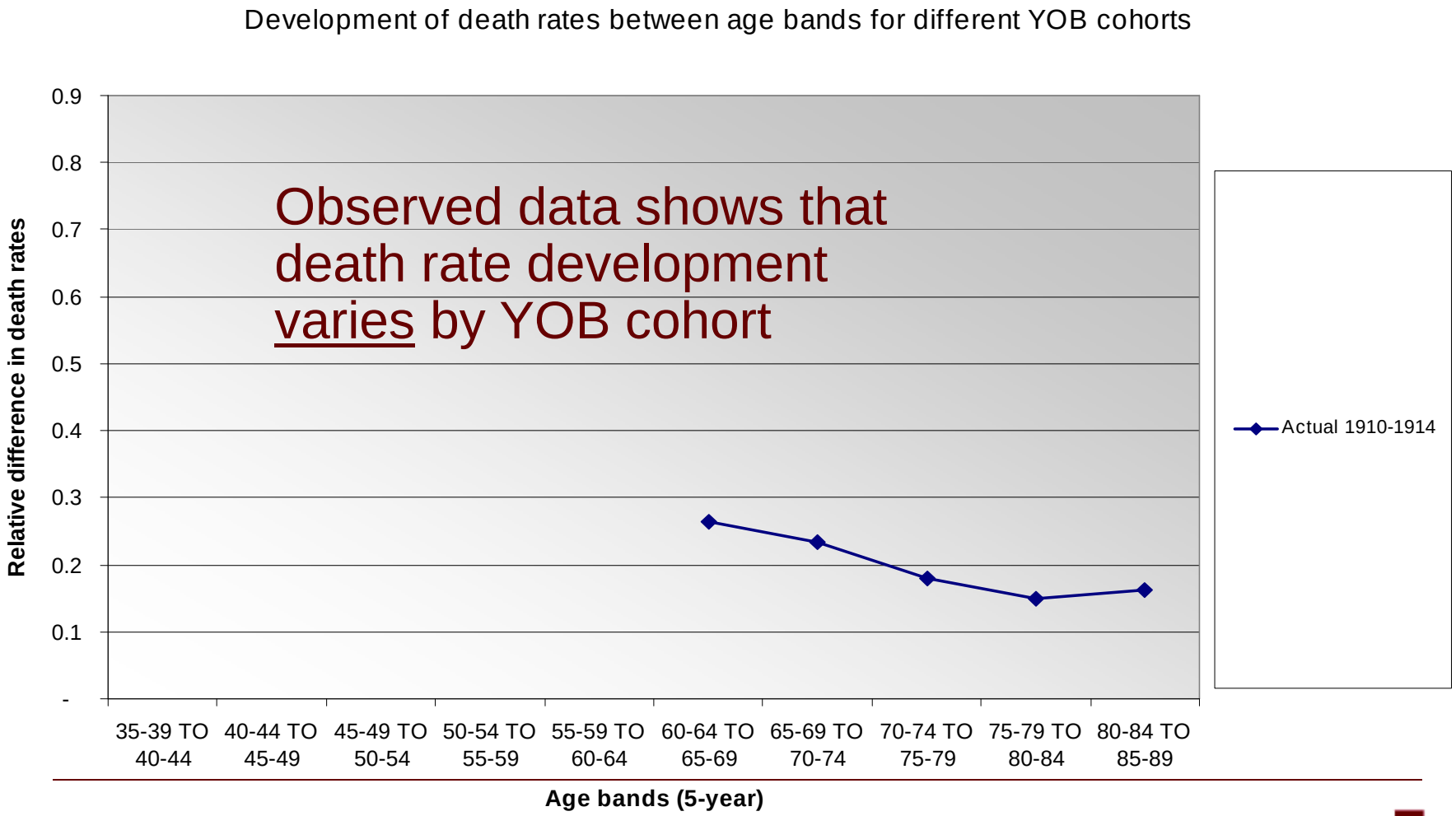
Disadvantages:

- background deaths may ‘swamp’ low value cells
- factor selection and fitting not straightforward
- incomplete observations…
- reliance on future population projections
- projection largely dependent on incomplete cohorts

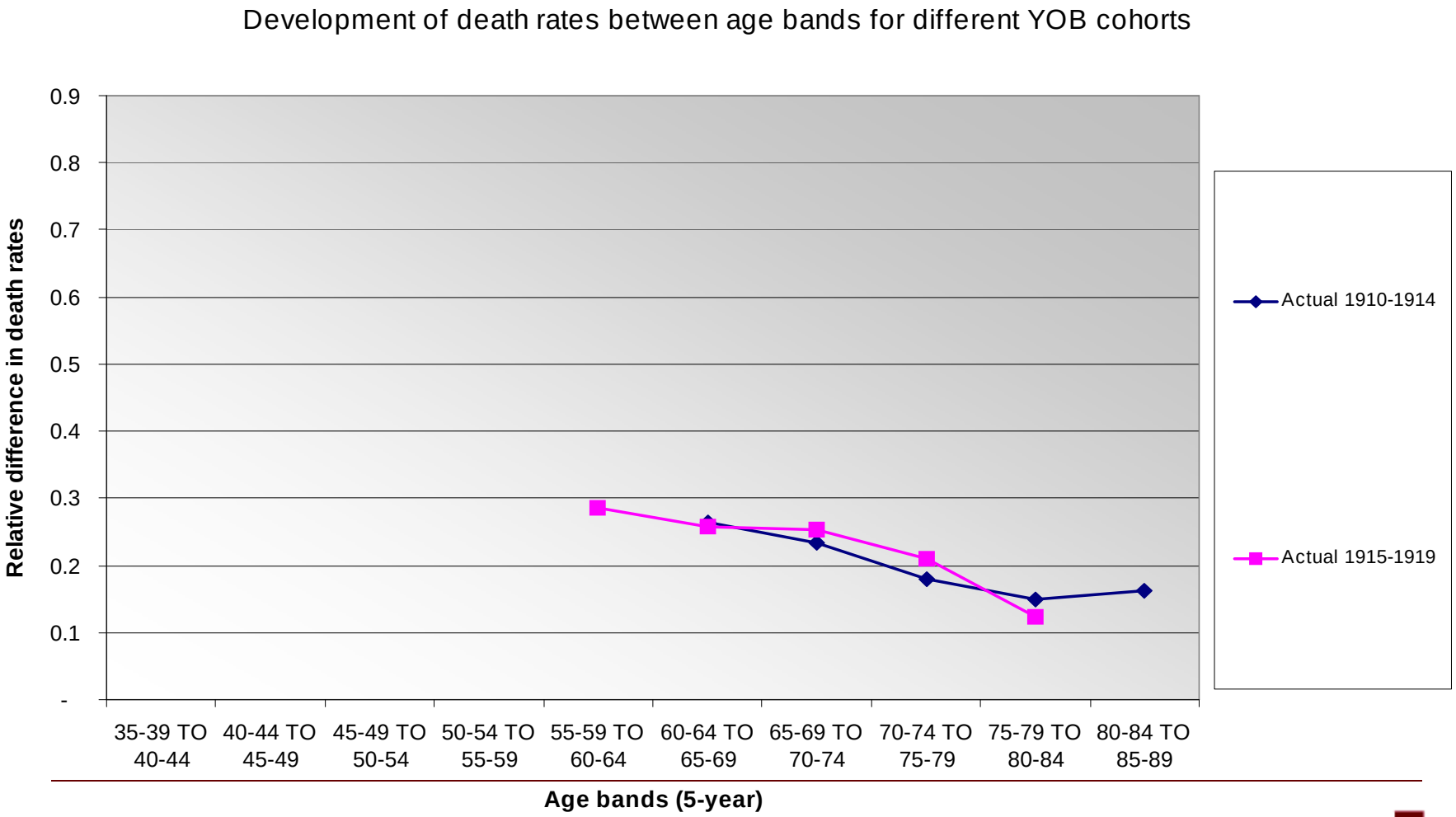
Major Disadvantage

…consider development of the incident rates…

Development of Incidence Rates



Development of Incidence Rates



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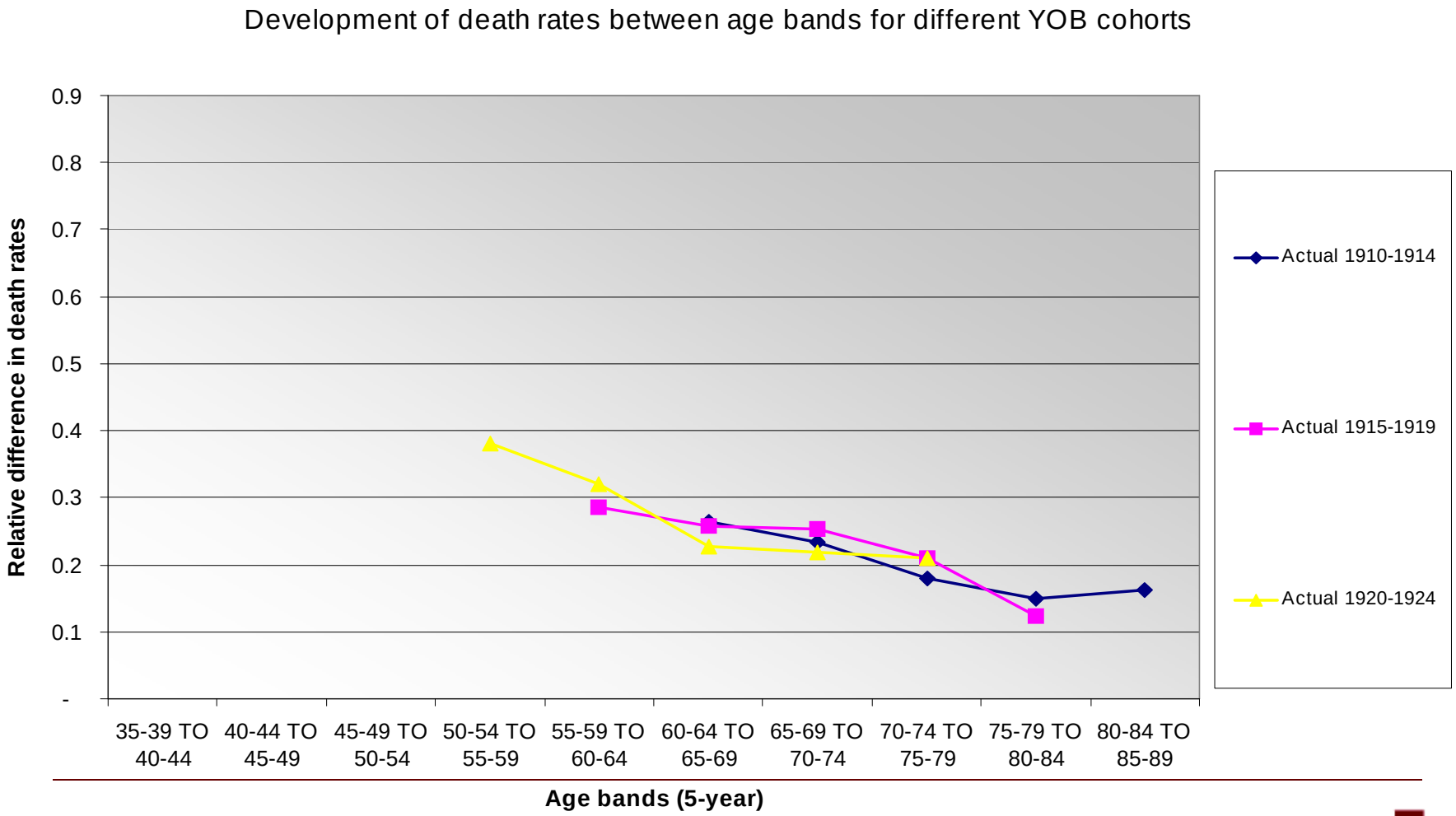

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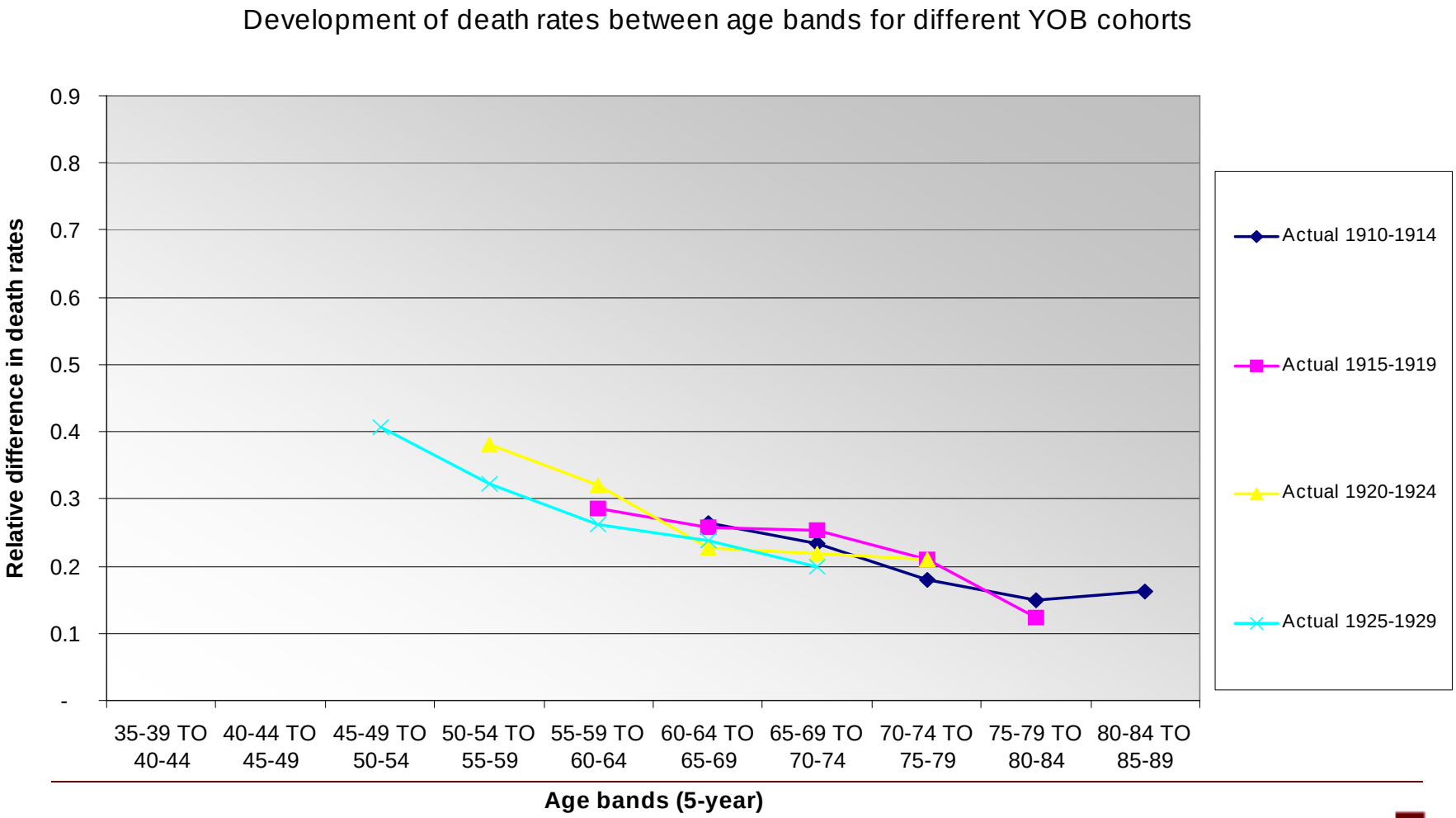

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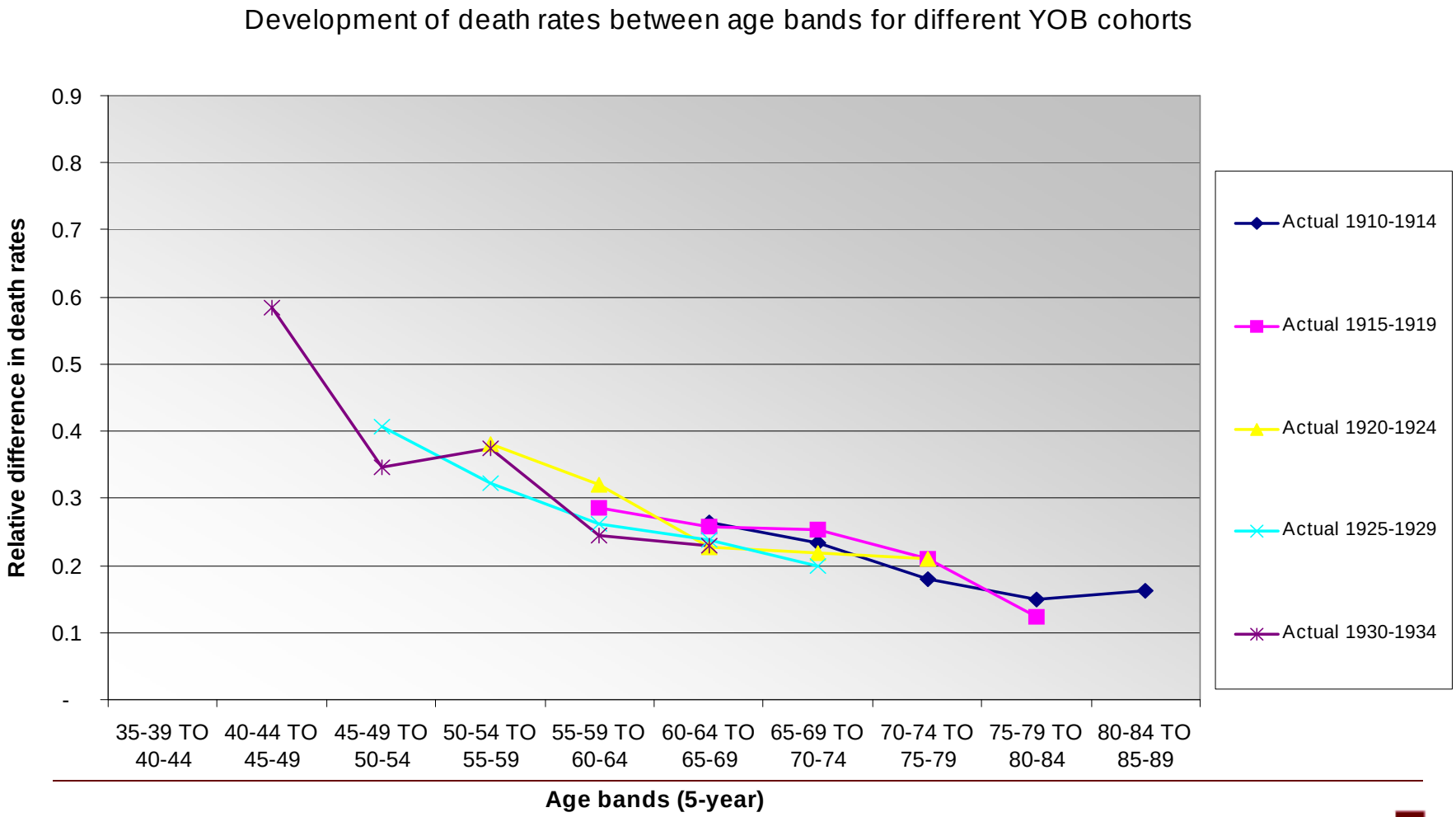

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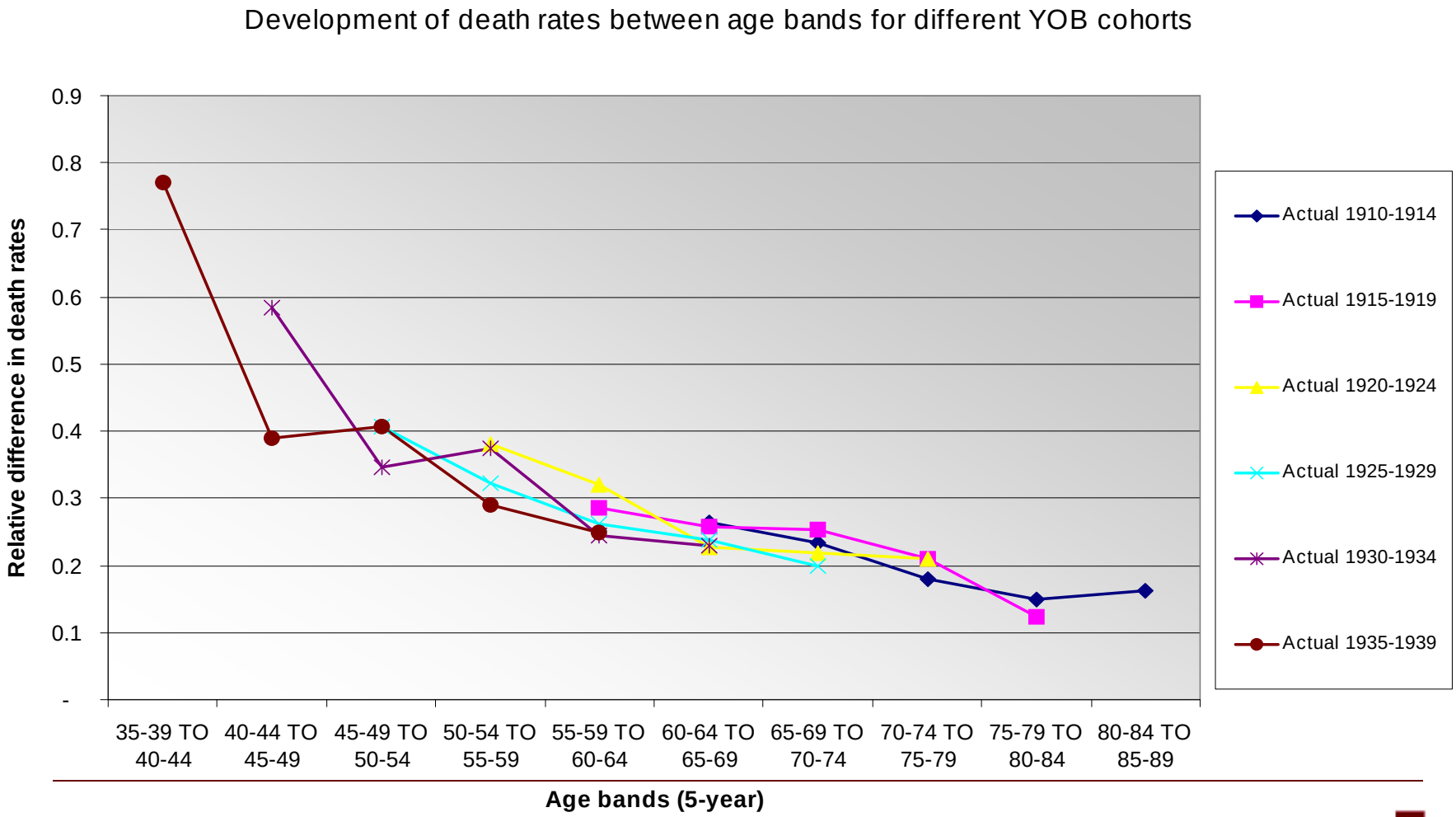

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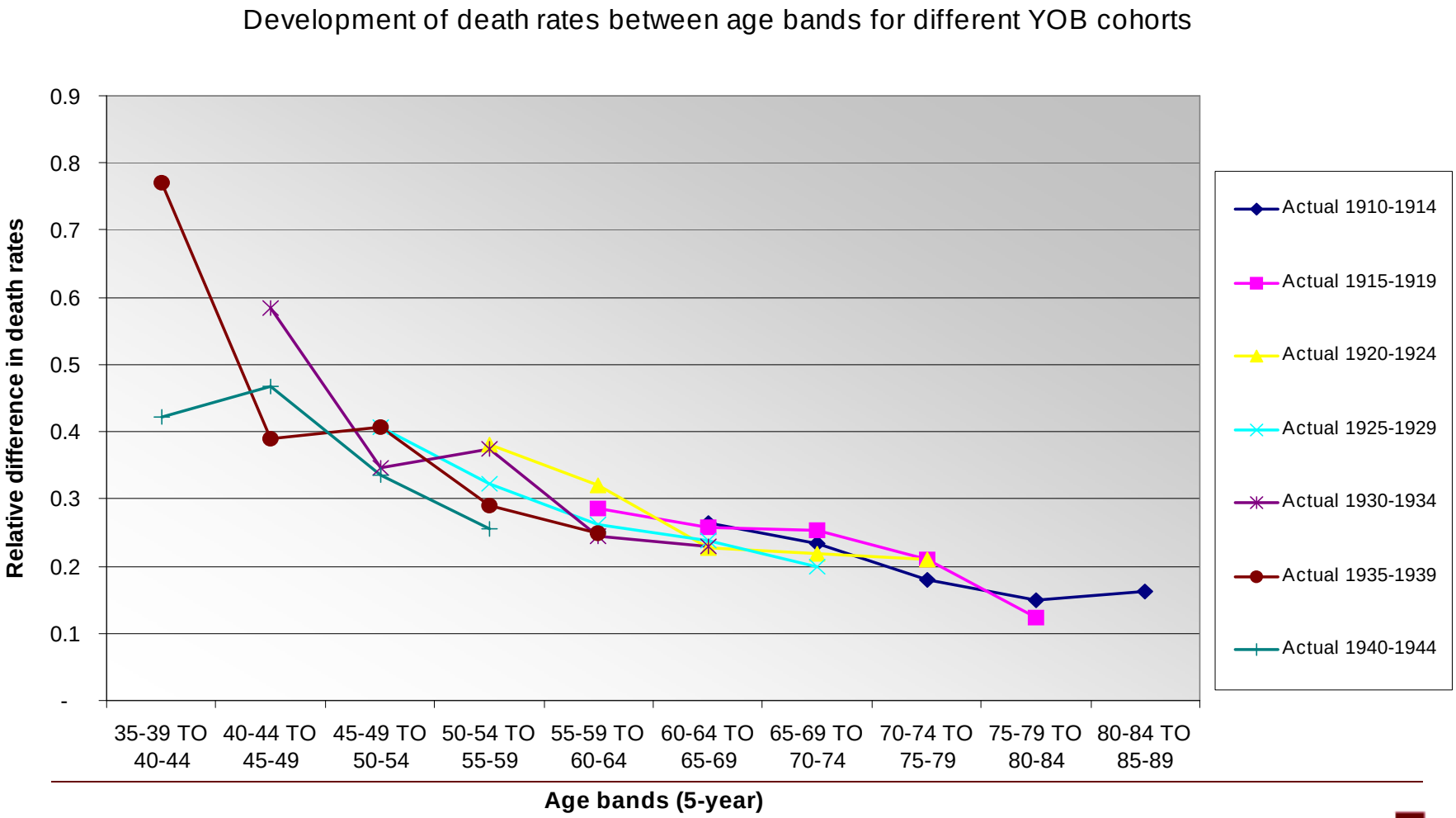

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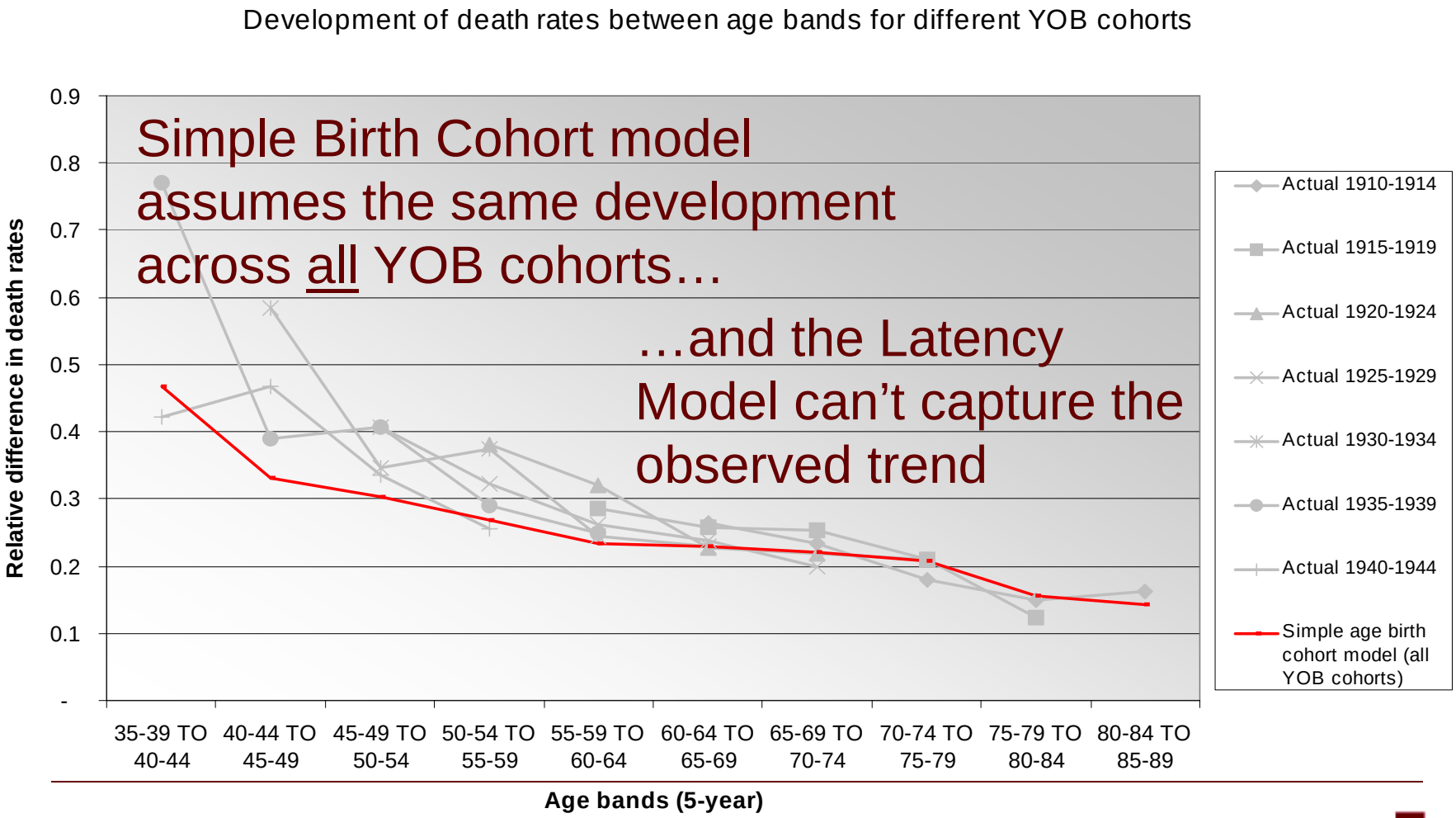
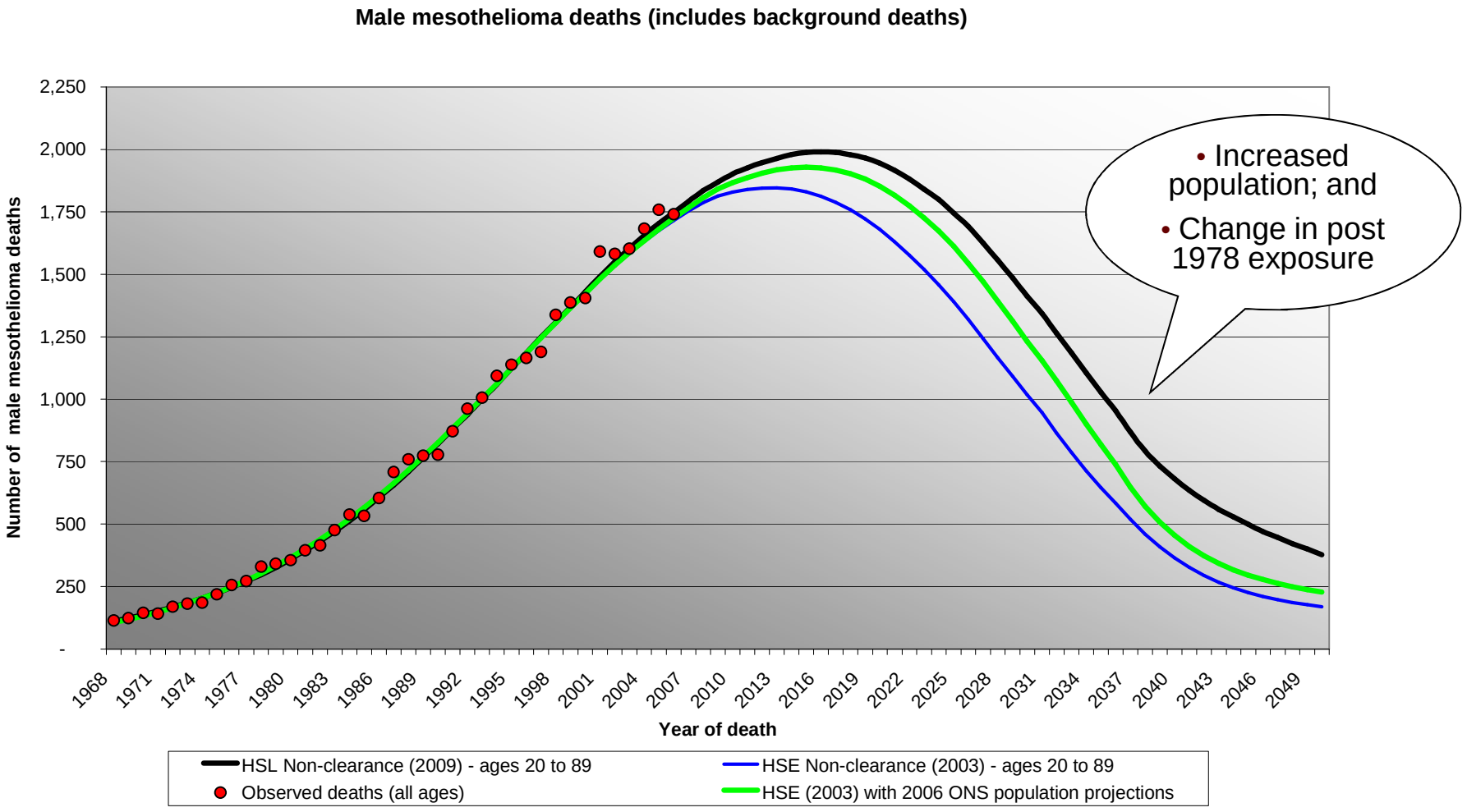


HSE/HSL parameters

- **Background rate**
  Deaths not related to exposure from asbestos
- **Exposure level**
  Exposure at any year for 20-29 year olds
- **Age-specific exposure**
  Scale factor for exposure given the age at that point in time
- **Population**
  GB historic and projected
- **Exponent of time (k)**
  Increasing risk of developing mesothelioma since exposure
- **Half-life (H)**
  Clearance of fibres from the lung
- **Diagnostic trend**
  Percentage of mesothelioma deaths diagnosed in any year

Comparing HSE/HSL to 2003



HSE/HSL Model

Pros

- More flexible as a result of its many parameters
- Allows different death rates
- Takes into account exposure explicitly

Cons

- Lots of parameters – difficult to parameterise
- May overestimate the number of deaths from 80+ year olds
- Uses GB population and not exposed population

AWP scenario assumptions

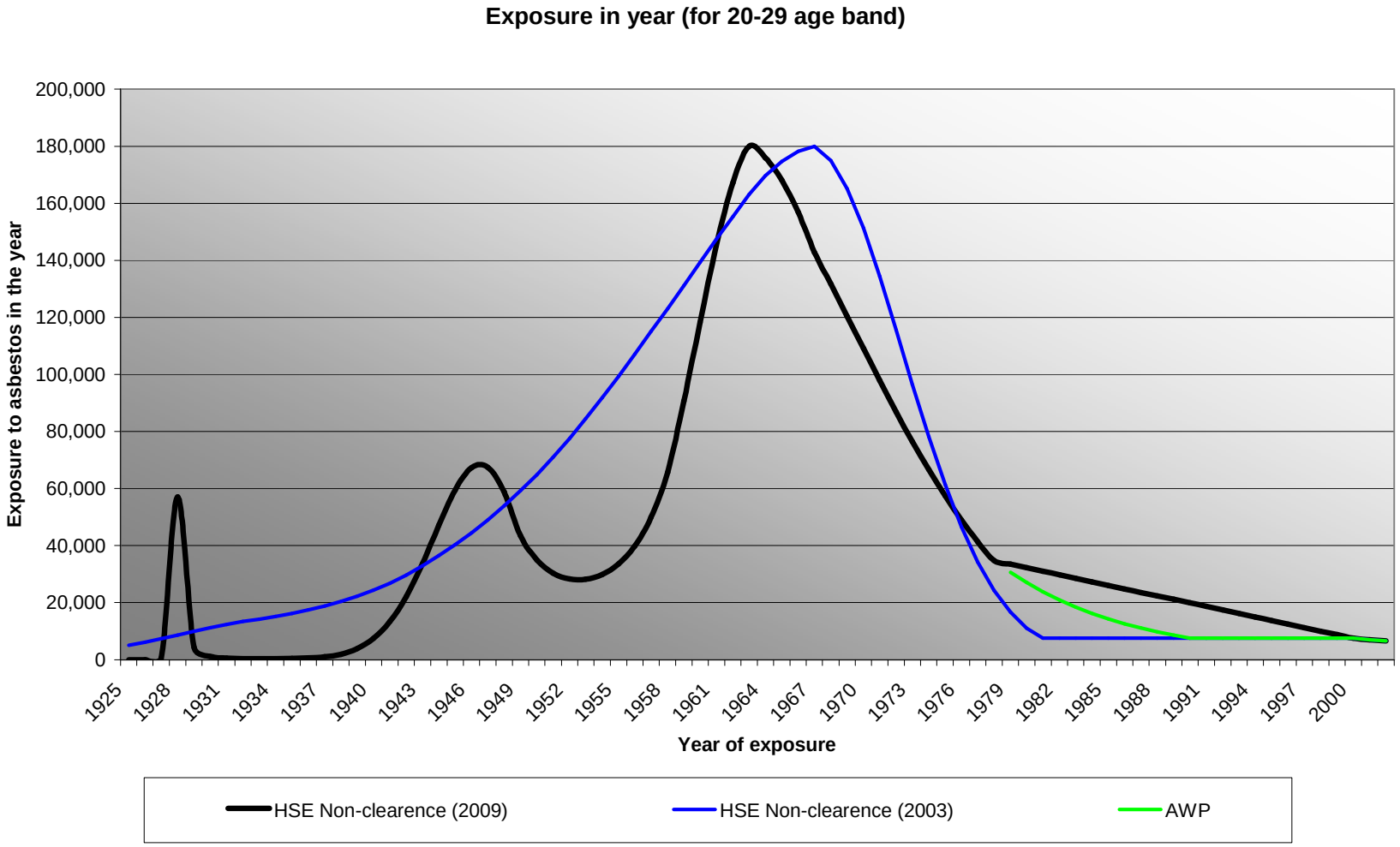
Base

- Exposure post-1978 based on imports
- Cap on k for 60+ years since exposure
  - This stops the risk of developing mesothelioma continuing to increase 60 years from exposure; and
  - Reduces 80+ old years deaths.
- No exposure for 50+ year olds

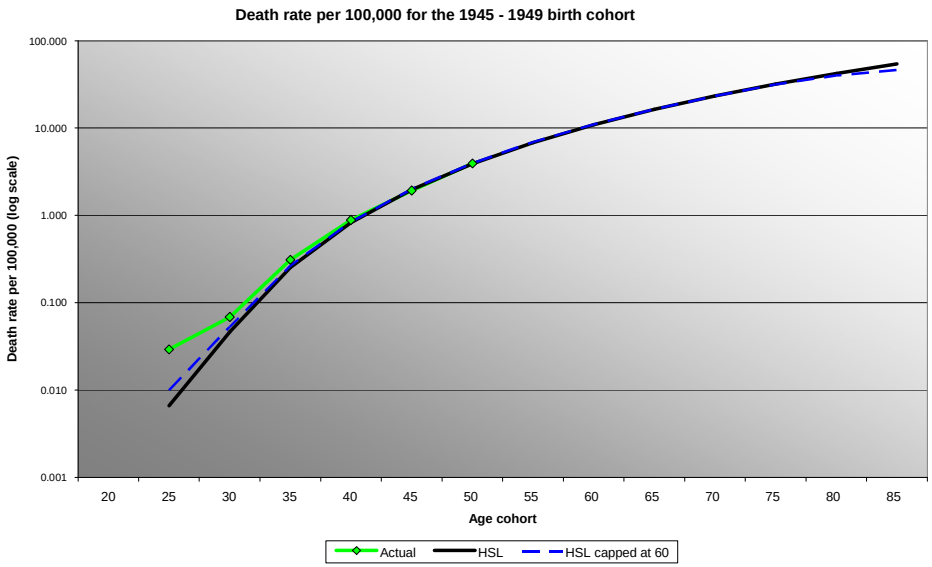
Other scenarios

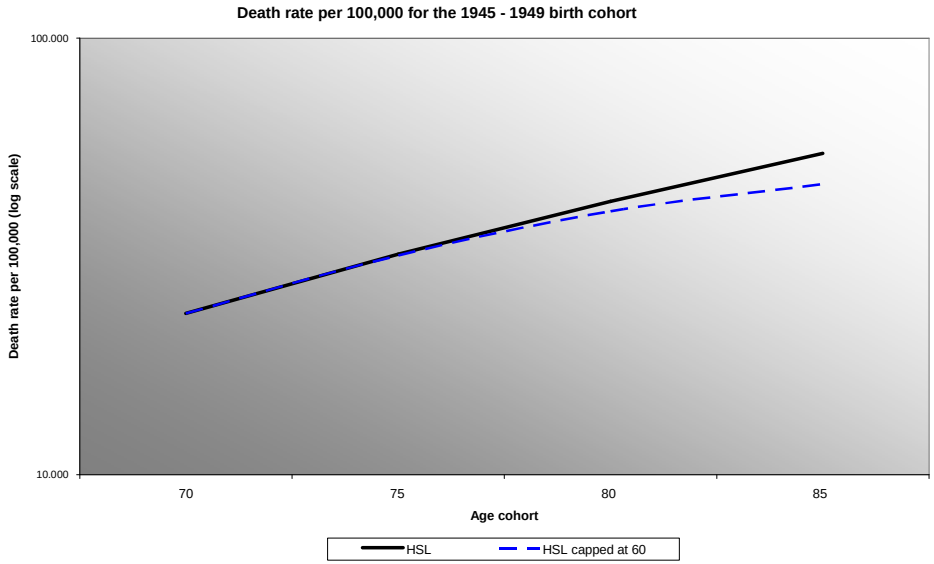
- Population – Removing the impact of immigration
- Population – Mortality
  - Claims data shows exposed population experience heavier mortality than GB population

AWP assumptions – Exposure level

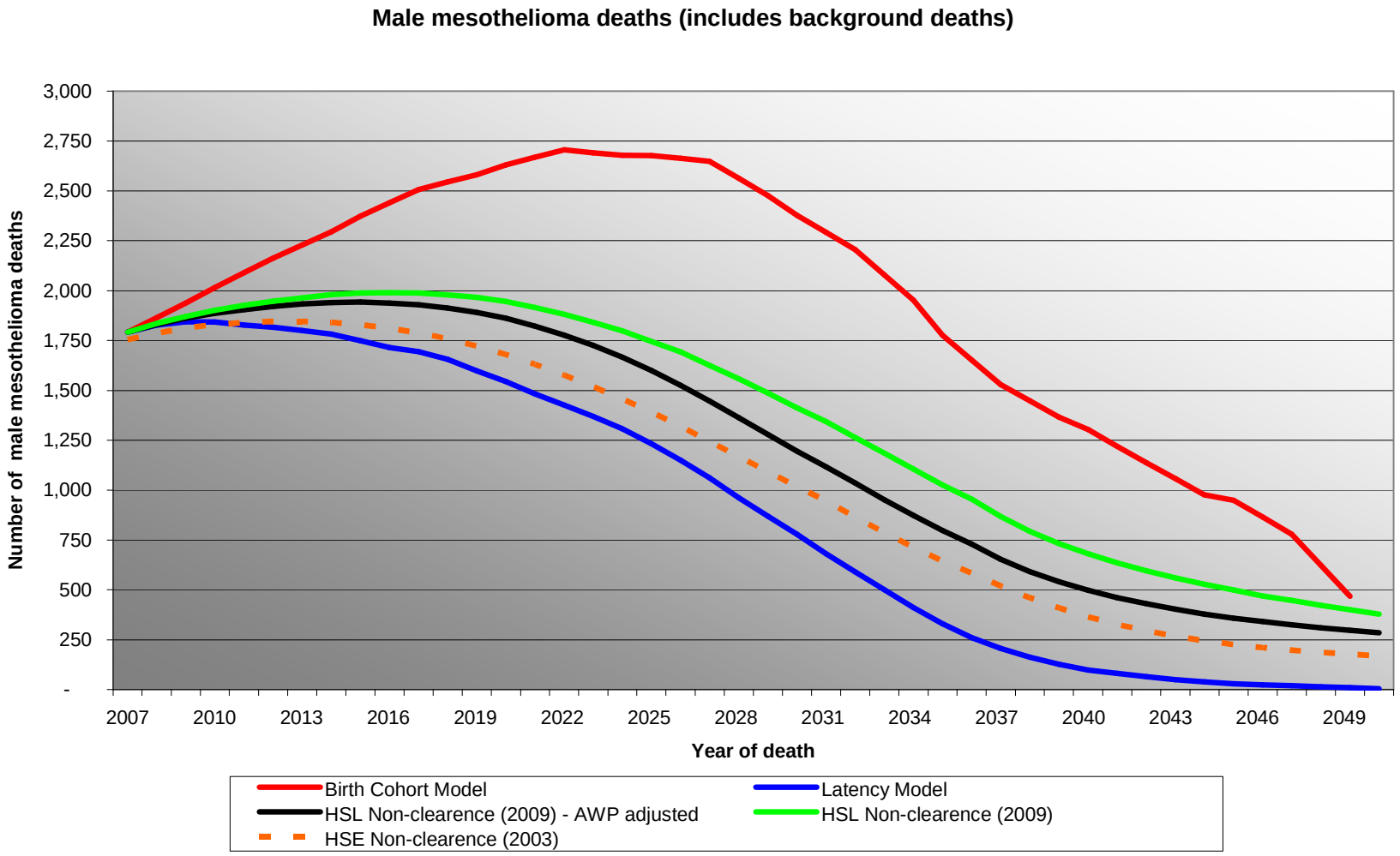


AWP assumptions – Cap on k

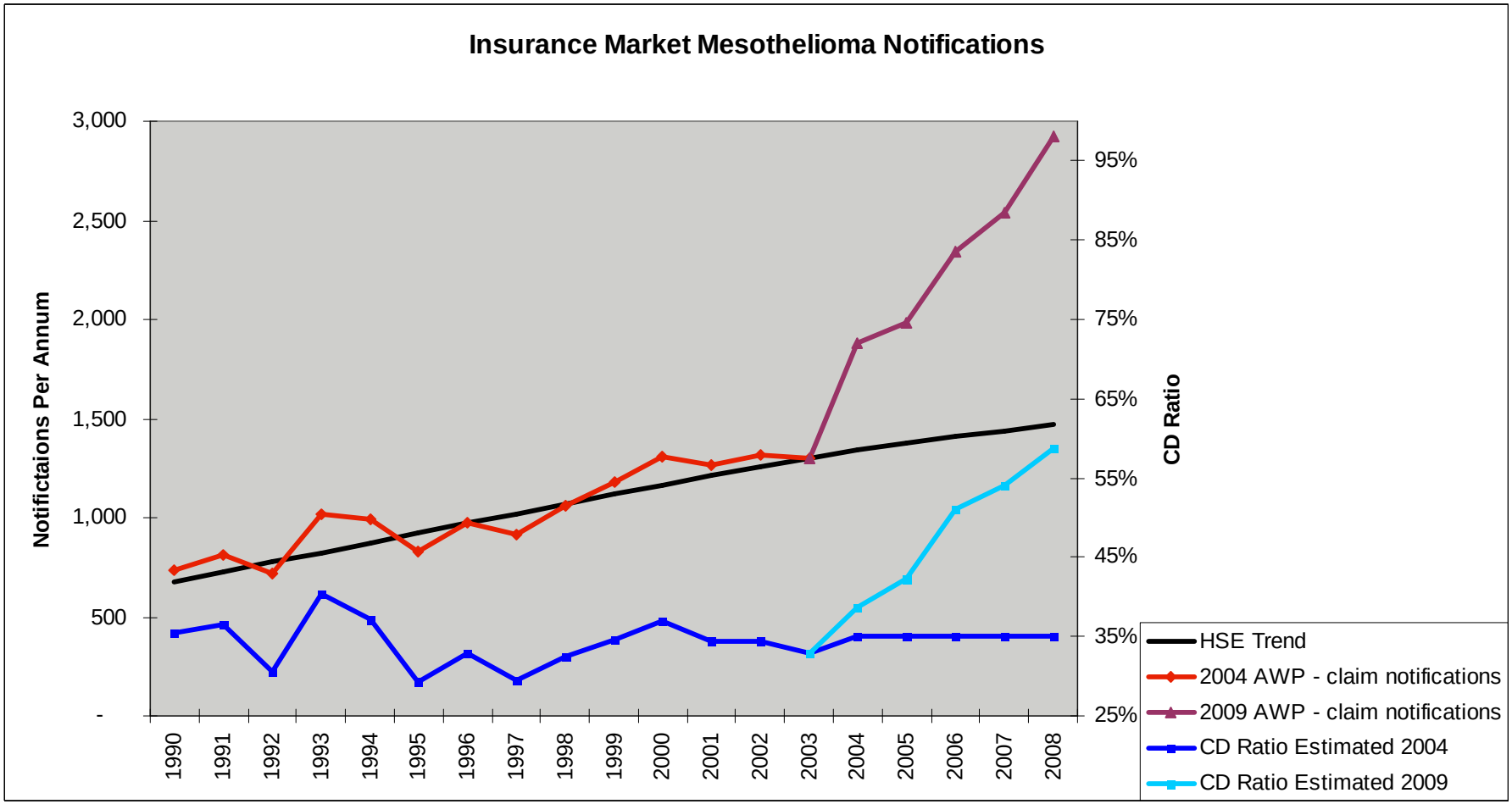




AWP scenarios – Population deaths



Claimants to Deaths Ratio – Historical Trends



Claimants to Deaths Ratio – Work Undertaken

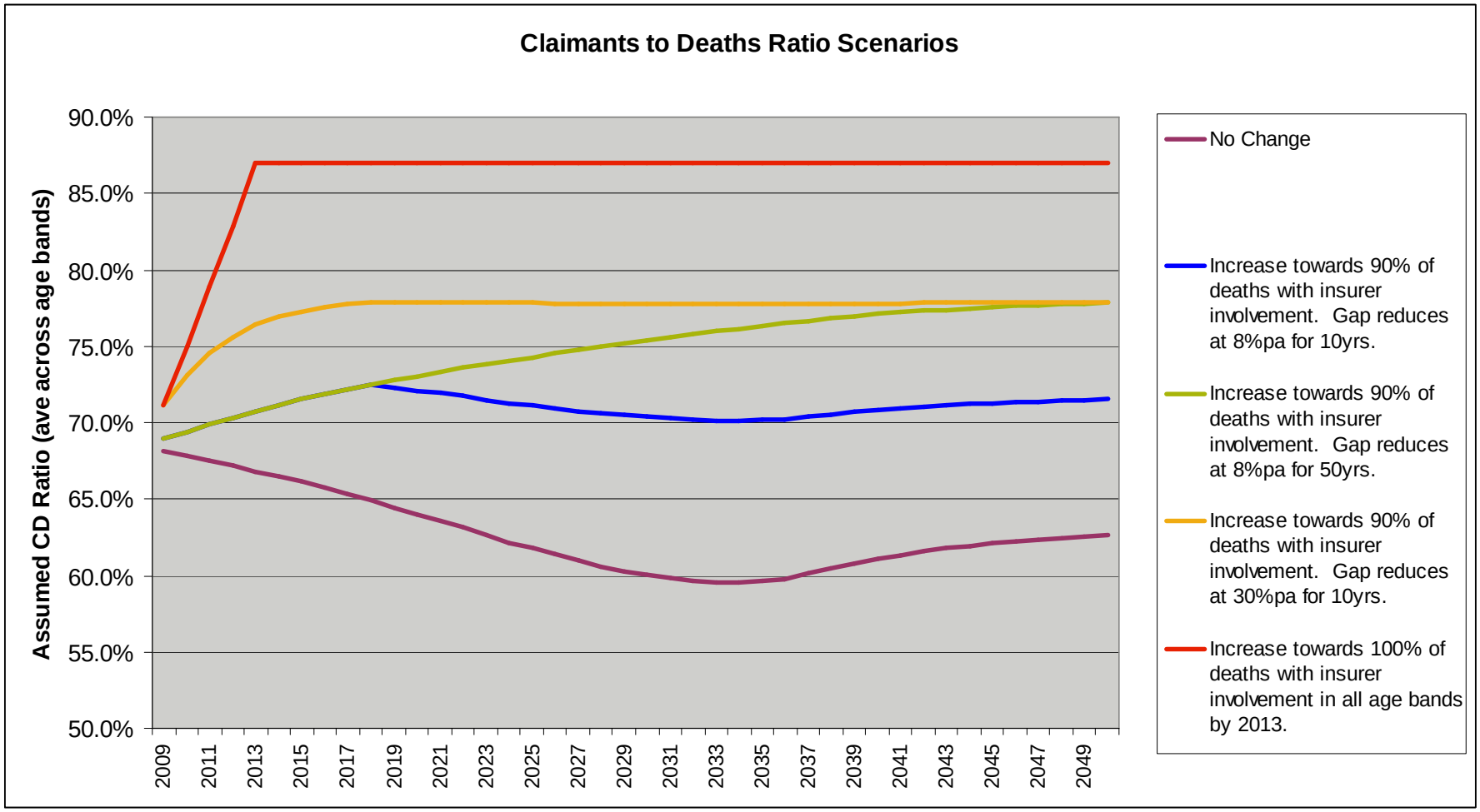
Current position determined by age band

Estimate proportion of deaths with no insured occupational involvement:

- Assume 1% of deaths relate to the armed forces
- Assume 2% of deaths relate to solely self employed individuals
- Assume 10% do not arise out of occupational exposure
- Suggesting 13% of deaths have no insured occupational involvement

The effect of potential changes in future CD ratios were then tested using a number of scenarios.

Claimants to Deaths Ratio – Scenarios used



Average Cost Per Claim (ACPC) Model

Changes since the 2004 Model:

- 2004 AWP assumed only lost income was age related
- 2008 review suggests that further claim elements are age related
- 2008 review also highlighted differences for living and deceased claimants
- Data for around 300 claimants reviewed
- Discussion with claims handlers

Average Cost Per Claim Model Assumptions

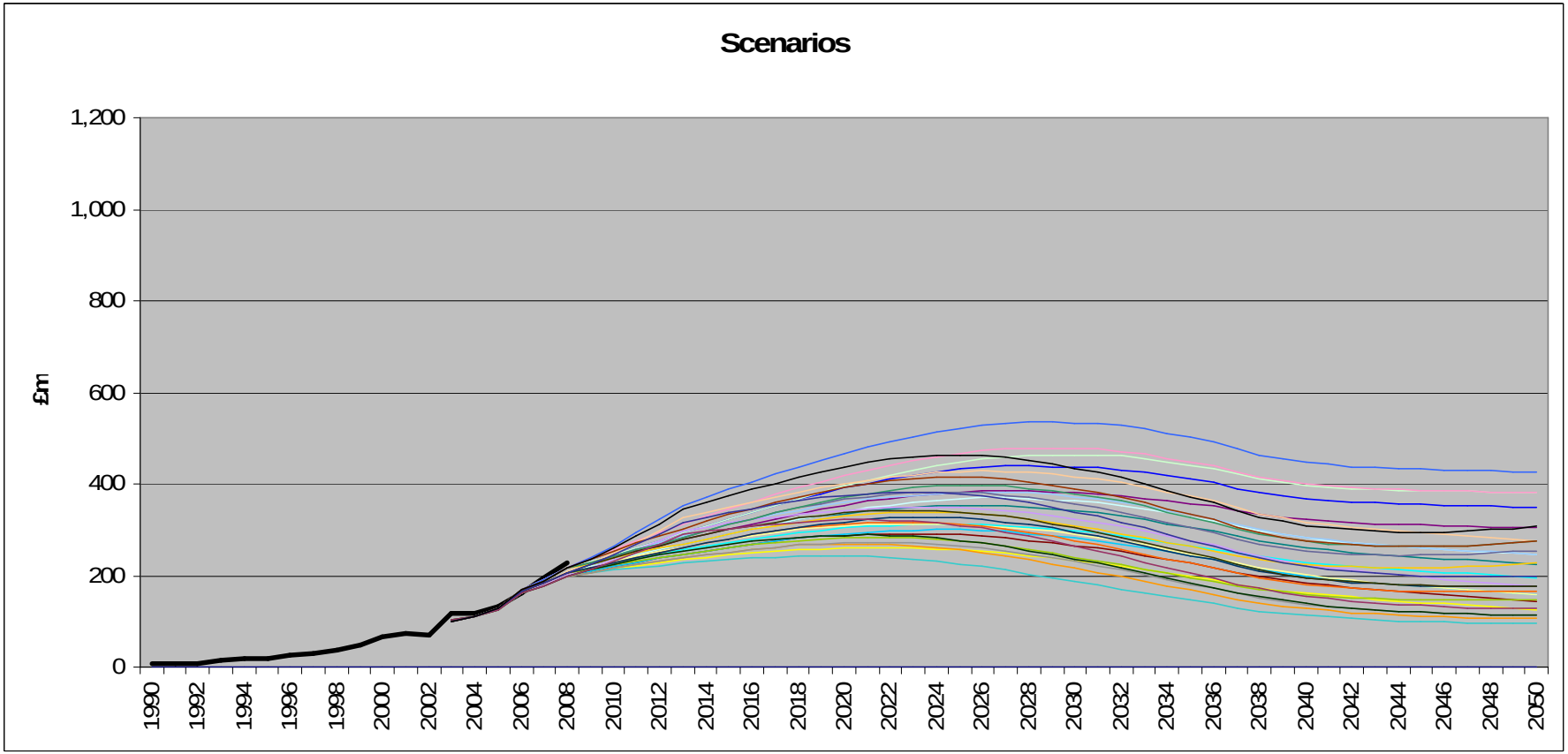
	Age Related	Inflation	Live/Deceased
General Damages (pain / suffering / loss of amenity)	Yes	Court	No
Special Damages (loss of future income)	Yes	Wage	Yes
PWCA	No	RPI	No
CRU	Yes	RPI	Yes
Bereavement award (proxy deceased indicator)	No	RPI	Yes
Funeral costs	No	RPI	Yes
Care costs	No	Wage	No
Misc (travel / medication etc.)	No	RPI	No
Other (interest on pre-settlement expenses / loss of past income)	No	Wage	No
Legal Fees	Yes	Wage	No

Draft Mesothelioma scenarios

60 Scenarios run:

Population Projections	CD Ratio		RPI
	CD Cap	Progression speed	
HSE Model	No Change	No Change	1.50%
Adjusted HSE Model	90% of claims with insured involvement	gap reduced at 8%pa for 10yrs	2.50%
Birth Cohort Model	90% of claims with insured involvement	gap reduced at 8%pa for 50yrs	3.50%
Latency Model	90% of claims with insured involvement	gap reduced at 30%pa for 10yrs	
	100% of claims with insured involvement	Cap reached by 2013	

Draft Mesothelioma scenarios



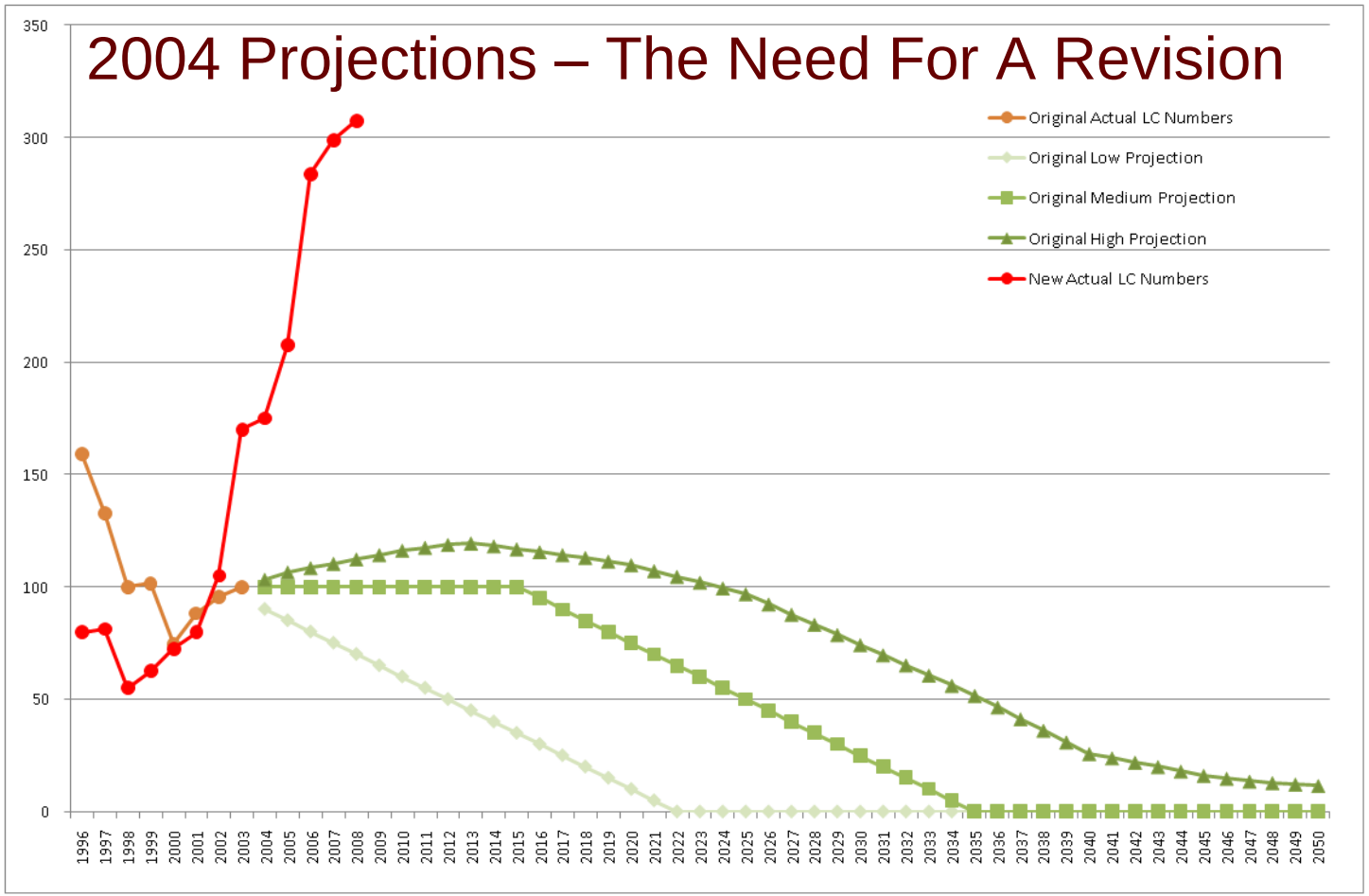
Draft Mesothelioma scenarios

Incurred Insurance Claim notifications (100% Market) £m	2004-2008	2009-2040	2041-2050	2009-2050
Estimated 2004 AWP MidMid	417	4,016	0	4,016
Actual	836			
Rebased 2004 AWP MidMid		Approx 8,000	0	Approx 8,000
Estimated 2009 AWP Indication		Approx 8,500	Approx 1,500	Approx 10,000

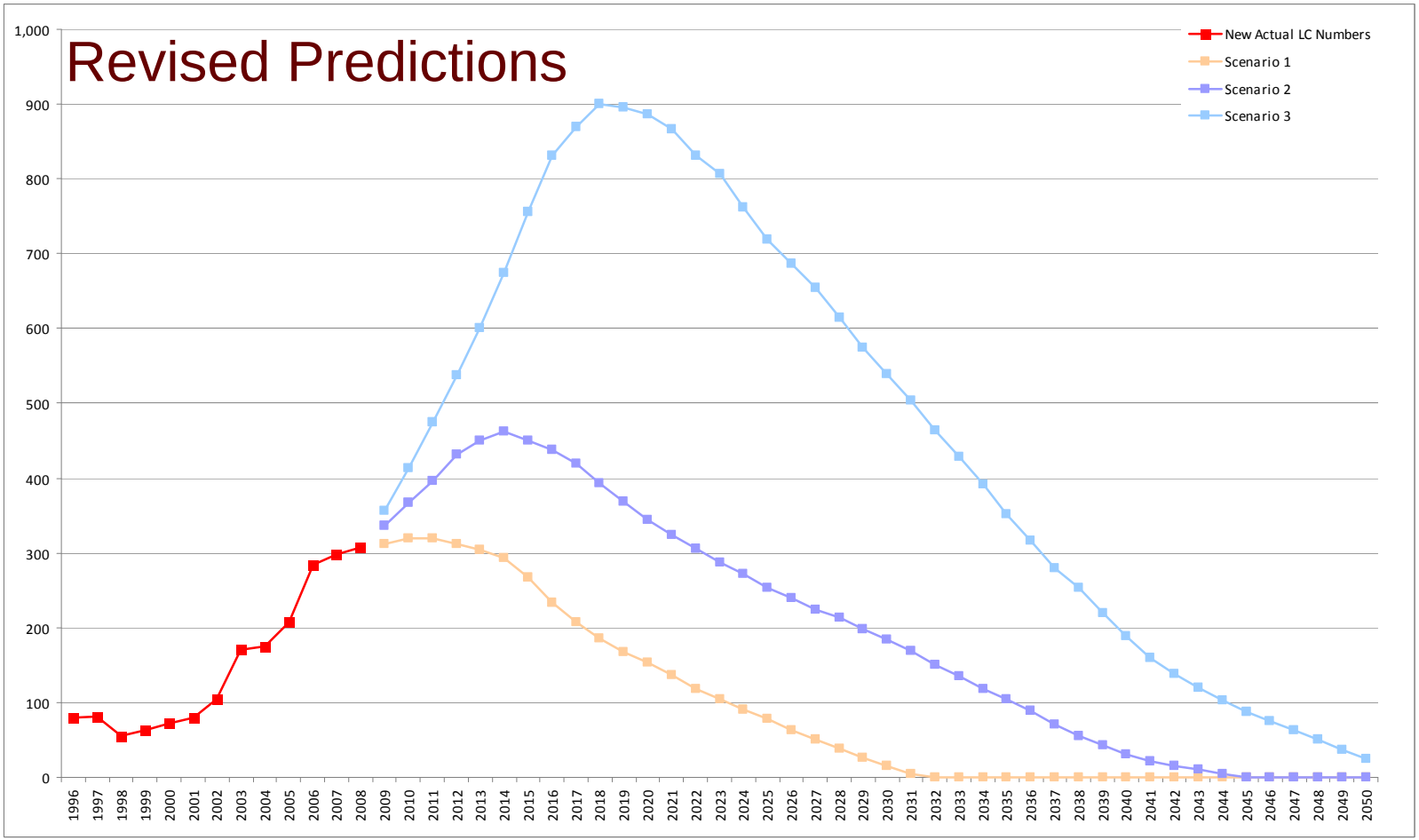
Key Uncertainties in Projection

- Future deaths due to mesothelioma very uncertain
- Models unlikely to be reliable beyond 10 years
- Number of people claiming in the future against employers / insurers difficult to predict
- Future inflation could be higher or lower than estimated
- Any point estimate is therefore very subjective

Non-Meso – Lung Cancer Claim Nos.



Non-Meso – Lung Cancer Claim Nos.



Lung Cancer Projected Claim Amounts

Summary Results (£m)

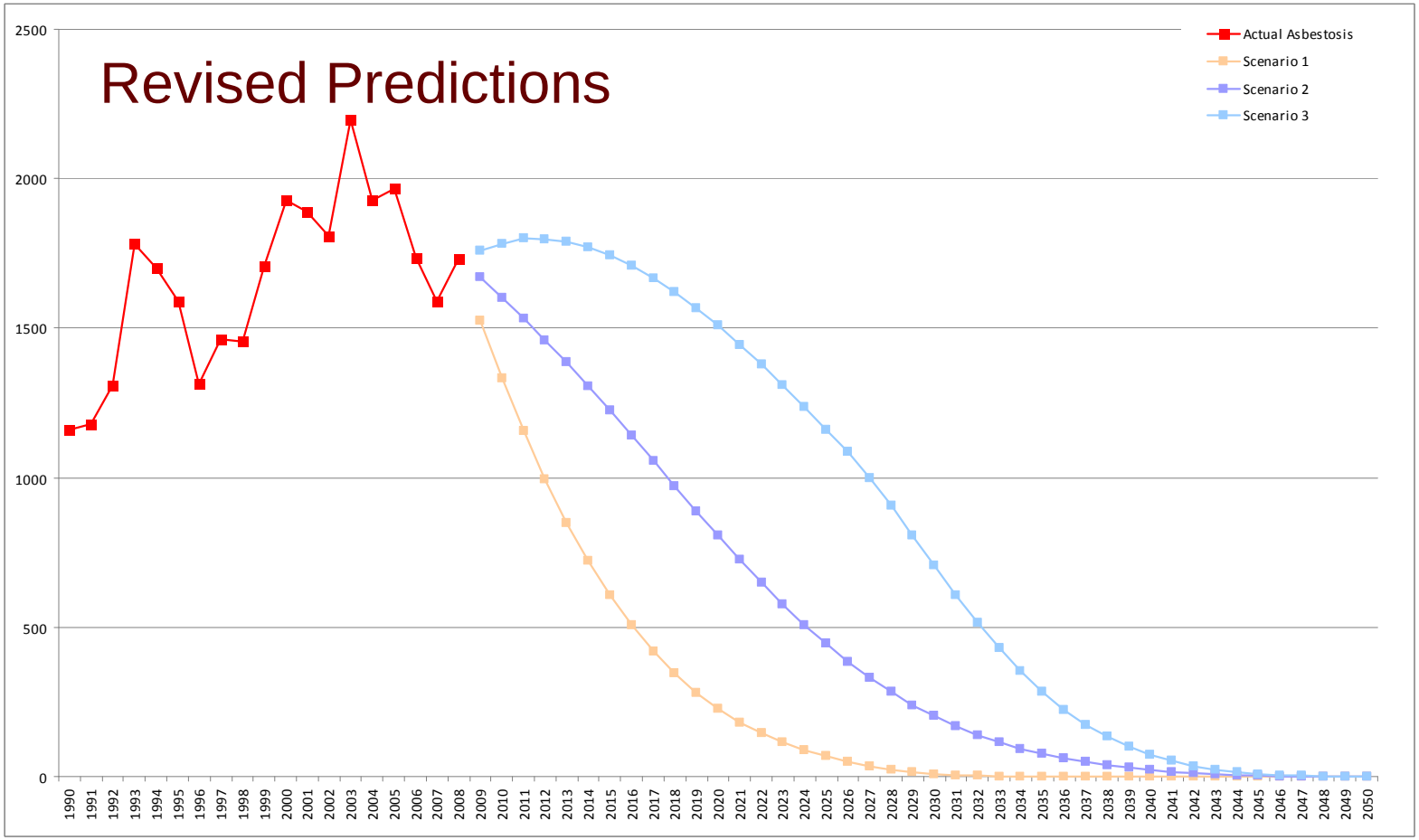
Old Lung Cancer Projections (Post 2009 Claims Only)

			Average Cost Per Claim		
			Inflation 1	Inflation 2	Inflation 3
			0%	4%	8%
Claim Numbers	Scenario 1	455	17	26	38
	Scenario 2	1,650	63	115	220
	Scenario 3	2,959	112	264	706

New Lung Cancer Projections

			Average Cost Per Claim		
			Inflation 1	Inflation 2	Inflation 3
			1%	3%	5%
Claim Numbers	Scenario 1	3,799	171	201	238
	Scenario 2	8,378	395	512	679
	Scenario 3	19,504	952	1,332	1,913

Non-Meso – Asbestosis Claim Nos.



Asbestosis Projected Claim Amounts

Summary Results (£m)

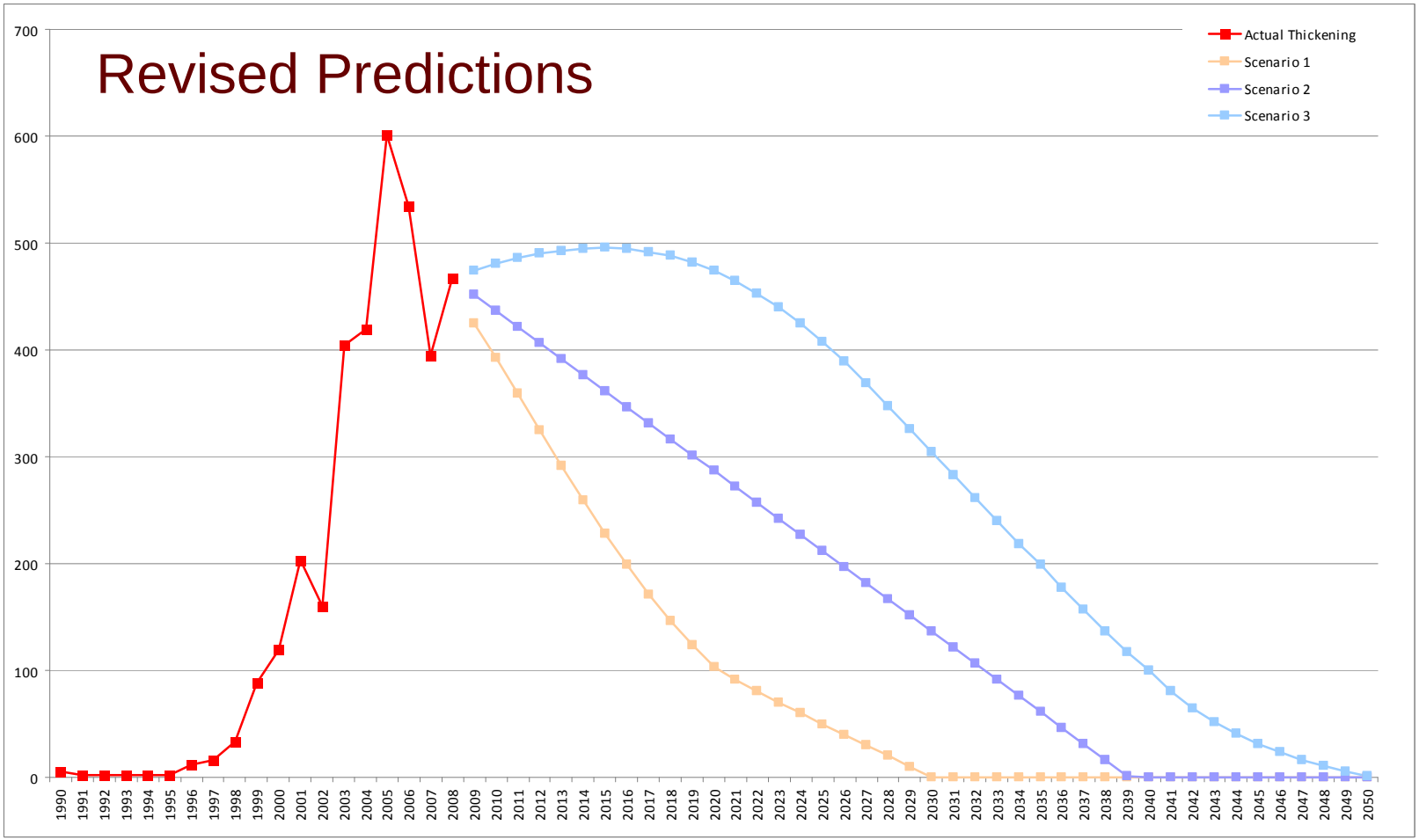
Old Asbestosis Projections (Post 2009 Claims Only)

			Average Cost Per Claim		
			Inflation 1	Inflation 2	Inflation 3
			1%	3%	5%
Claim Numbers	Scenario 1	15,087	291	378	496
	Scenario 2	20,671	404	539	728
	Scenario 3	32,570	649	902	1,274

New Asbestosis Projections

			Average Cost Per Claim		
			Inflation 1	Inflation 2	Inflation 3
			1%	3%	5%
Claim Numbers	Scenario 1	9,702	192	216	243
	Scenario 2	20,224	415	503	619
	Scenario 3	34,576	728	932	1,214

Non-Meso – Thickening Claim Nos.



Thickening Projected Claim Amounts

Summary Results (£m)

Old Plaques/Thickening Proj.
(Post 2009 Claims Only)

			Average Cost Per Claim		
			Inflation 1	Inflation 2	Inflation 3
			1%	3%	5%
Claim Numbers	Scenario 1	900	11	12	14
	Scenario 2	7,900	93	107	122
	Scenario 3	30,900	366	425	491

New Thickening Projections
Note: Pleural Thickening only

			Average Cost Per Claim		
			Inflation 1	Inflation 2	Inflation 3
			1%	3%	5%
Claim Numbers	Scenario 1	4,176	74	85	98
	Scenario 2	7,024	157	197	253
	Scenario 3	11,986	276	375	522

Total Non-Meso Projected Claim Amounts

Summary Results (£m)

Old Non-Meso Projections (Post 2009 Claims Only)

			Average Cost Per Claim		
			Inflation 1	Inflation 2	Inflation 3
Claim Numbers	Scenario 1	16,442	319	416	548
	Scenario 2	30,221	560	761	1,070
	Scenario 3	66,429	1,128	1,591	2,471

New Non-Meso Projections excluding pleural plaques

			Average Cost Per Claim		
			Inflation 1	Inflation 2	Inflation 3
			1%	3%	5%
Claim Numbers	Scenario 1	17,676	437	501	579
	Scenario 2	35,625	966	1,213	1,550
	Scenario 3	66,066	1,957	2,639	3,648

Pleural Plaques

- Government in England and Wales have not yet made an announcement following the consultation paper.
- Scottish Government has legislated to make pleural plaques compensable.
- This decision is currently under Judicial Review.
- Large uncertainty in respect of potential pleural plaques claims.
- Working Party has not estimated an insurance market cost for pleural plaques.
- Estimate a cost only if they are deemed compensable in the future.

Summary

- DRAFT UK asbestos insurance market estimates.
- Final report in the next couple of months.
- Reserving Actuaries need apply their own judgement.

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