

THE ROLE OF GOVERNMENT ACTUARIES IN SUPPORT OF THE DEVELOPMENT OF PUBLIC POLICY



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THE ROLE OF ACTUARIES

What can actuaries do?

Actuaries are

- > professionals with expertise in quantitative techniques
- > acknowledged experts in the analysis and modelling of situations involving financial risk and contingent events
- > able to provide realistic solutions to complex problems with a long term forward look



THE ROLE OF ACTUARIES

Actuarial skills

- > mathematics and statistics
- > demography
- > economics
- > finance and investment
- > modelling
- > risk analysis and management
- > long-term perspective
- > professional ethos and standards



THE ROLE OF ACTUARIES

Major fields of actuarial work

- > life insurance
- > general insurance
- > pensions
- > social security
- > investment
- > banking
- > health care financing
- > corporate finance
- > expert witness
- > personal financial advice
- > education and research
- > government service



THE ROLE OF ACTUARIES IN GOVERNMENT

Roles for actuaries in government work

- > regulation and supervision of insurance companies
- > regulation and supervision of private pension funds
- > financing of social security
- > social security reform and pension legislation
- > financing of public sector pension plans
- > demographic projections
- > financing of health care
- > consumer credit
- > management of other long term financial risks



ACTUARIES IN REGULATION

Regulation of insurance companies

- > regulation of insurance needs significant actuarial input
- > design of legislation and solvency and reserving standards
- > preparing practice standards and guidance
- > authorisation of new companies and lines of business
- > review of reinsurance programmes
- > product approval and price regulation (where relevant)
- > transfers of business



Supervision and monitoring of insurance companies

- > monitoring companies' annual statements
- > analysis of financial strength of companies...
- > ...for both life and non-life insurance companies
- > dialogue with company actuaries
- > review of internal models
- > on-site company visits



Regulation of private pension plans (defined benefit)

- > legislation for private pension plans
- > setting funding standards for defined benefit plans
- > accounting for pension liabilities
- > transferability and preservation of accrued rights
- > splitting of pension rights on divorce
- > disclosure requirements



ACTUARIES IN REGULATION

Regulation of private pension plans (defined contribution)

- > legislation for private pension plans
- > control of charges/commissions
- > provision for guarantees
- > fiscal cost of government funded guarantees
- > disclosure requirements
- > targetting benefit levels
- > annuitisation requirements



Supervision and monitoring of private pension plans

- > monitoring of funding position
- > recovery plans
- > preventive measures
- > pension implications of mergers and takeovers
- > operation of guarantee fund
- > rescuing and winding up pension funds



Understanding the finances of social security

- > slow build-up of promises
- > strong cash-flows may be misleading
- > demographic change has a long-term impact
- > major component of public expenditure
- > public and private provision may interact



ACTUARIES IN SOCIAL SECURITY

Actuarial roles in social security schemes

- > demographic projections
- > estimates of future benefit outgo
- > estimates of future contribution income
- > long-term projections of financial balance
- > short/medium term estimates of cash-flow
- > development of financing/funding strategies
- > periodic actuarial reviews



ACTUARIES IN SOCIAL SECURITY

Report on Actuarial Review

- > purpose of report
- > data sources - comment on inadequacies
- > broad description of methodology
- > assumptions (with reasoning)
- > projections of income and expenditure
- > contributions necessary to maintain balance
- > sensitivity and risk analysis



ACTUARIES IN SOCIAL SECURITY

Role of actuary in social security reform

- > analysis of costs of existing arrangements
- > advice on design of alternative structures
- > modelling the transition (for scheme and economy)
- > modelling impact on public expenditure/borrowing
- > modelling impact on individuals
- > design and regulation of complementary schemes
- > modelling impact on investment markets



ACTUARIES IN SOCIAL SECURITY

International Social Security Association

- > governance and investment guidelines
- > “An actuary should be appointed... to carry out periodic actuarial reviews of the scheme.”
- > “The actuary should be free from political interference.”

International Actuarial Association

- > guidelines for social security actuaries



ACTUARIES IN PUBLIC SECTOR PENSIONS

Public Sector Pensions

- > advice to public sector pension plans
- > valuation of assets and liabilities
- > making cash flow projections to assist in financial strategies, especially for PAYGO plans
- > stochastic asset-liability modelling to identify the best investment strategy for funded plans
- > modelling for manpower planning
- > advising on terms for individual members, especially high level appointments/departures



ACTUARIES IN PUBLIC SECTOR PENSIONS

Public Sector Pension Policy

- > advice to Ministry of Finance on future cash flows of pay-as-you-go public sector pension plans
- > design of new schemes and support for negotiations with unions
- > advice on transfer values (individual and group)
- > pension aspects of public/private partnerships and privatisations



ACTUARIES IN HEALTH CARE FINANCING

Financing of health care

- > modelling future expenditure
- > design of insurance based systems
- > community rating
- > allocation of resources in national health
- > cost-benefit analysis of treatments
- > financial appraisal of major capital projects
- > risk analysis and management
- > financing of long term care for the elderly



GOVERNMENT ACTUARY'S DEPARTMENT (GAD)

What is the Government Actuary's Department of the UK?

- > separate UK government department
- > established in 1919...
- > ...to advise on financing of social security
- > reporting to the Minister of Finance (Chancellor)
- > now broad-based actuarial consultancy providing services to many clients in the UK and internationally
- > focussing primarily on public sector clients



What does GAD do?

- > GAD offers a centralised actuarial consultancy service for public sector clients throughout the UK (and in a number of other countries)
- > our skills and advice enable clients to:
 - > formulate national policy
 - > manage public sector finances
 - > project the impact of population changes
 - > monitor and supervise financial institutions



Main areas of GAD's services

- > financing and reform of social insurance
- > pension policy, legislation and reform
- > occupational pensions for the public sector
- > regulation of private pension plans
- > regulation of insurance companies



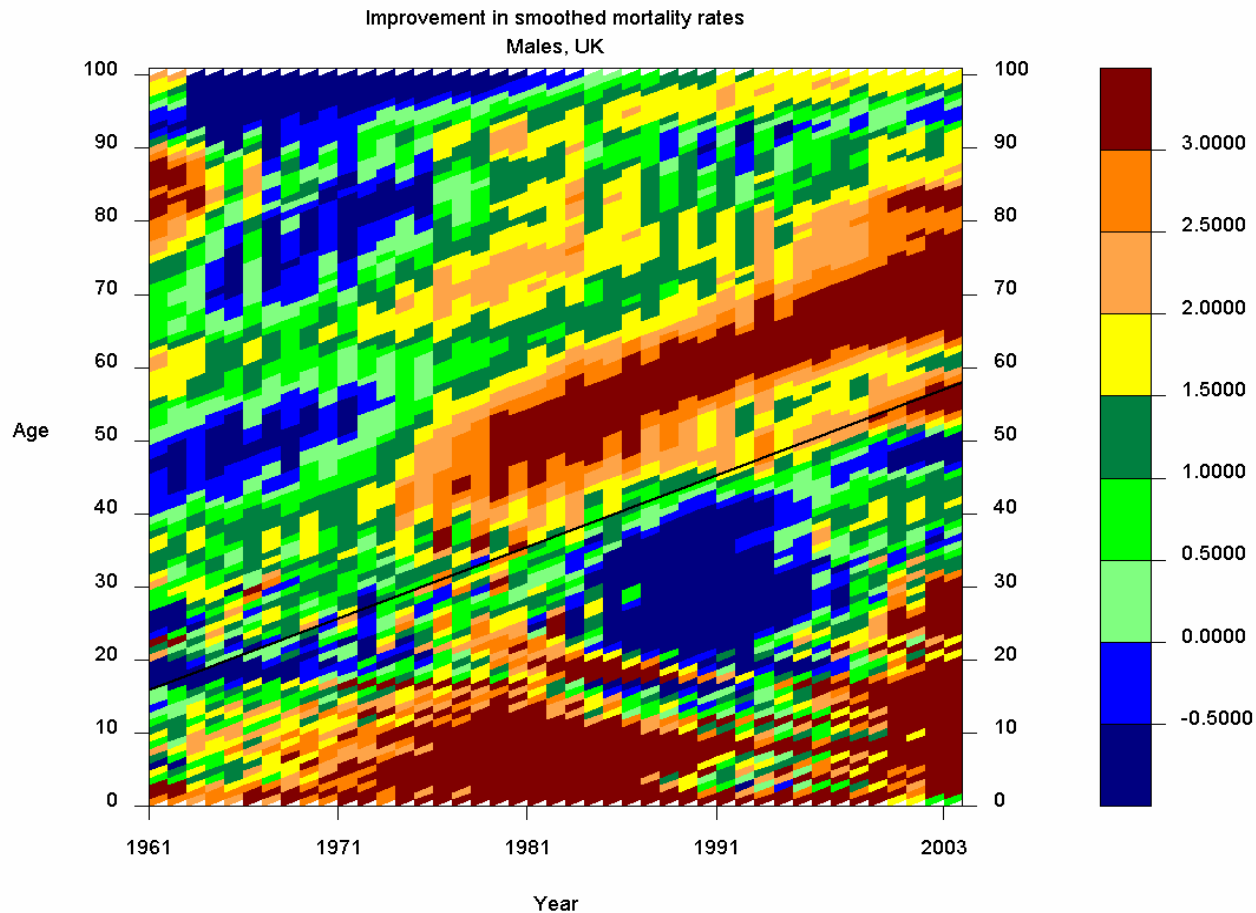
Population projections

- > from 1954 to 2006 GAD was responsible for the national population projections
- > role subsumed into new National Statistics Centre for Demography in January 2006
- > GAD remains a centre of expertise on mortality matters
- > GAD projections used for all official purposes
- > current and past projections on GAD website*



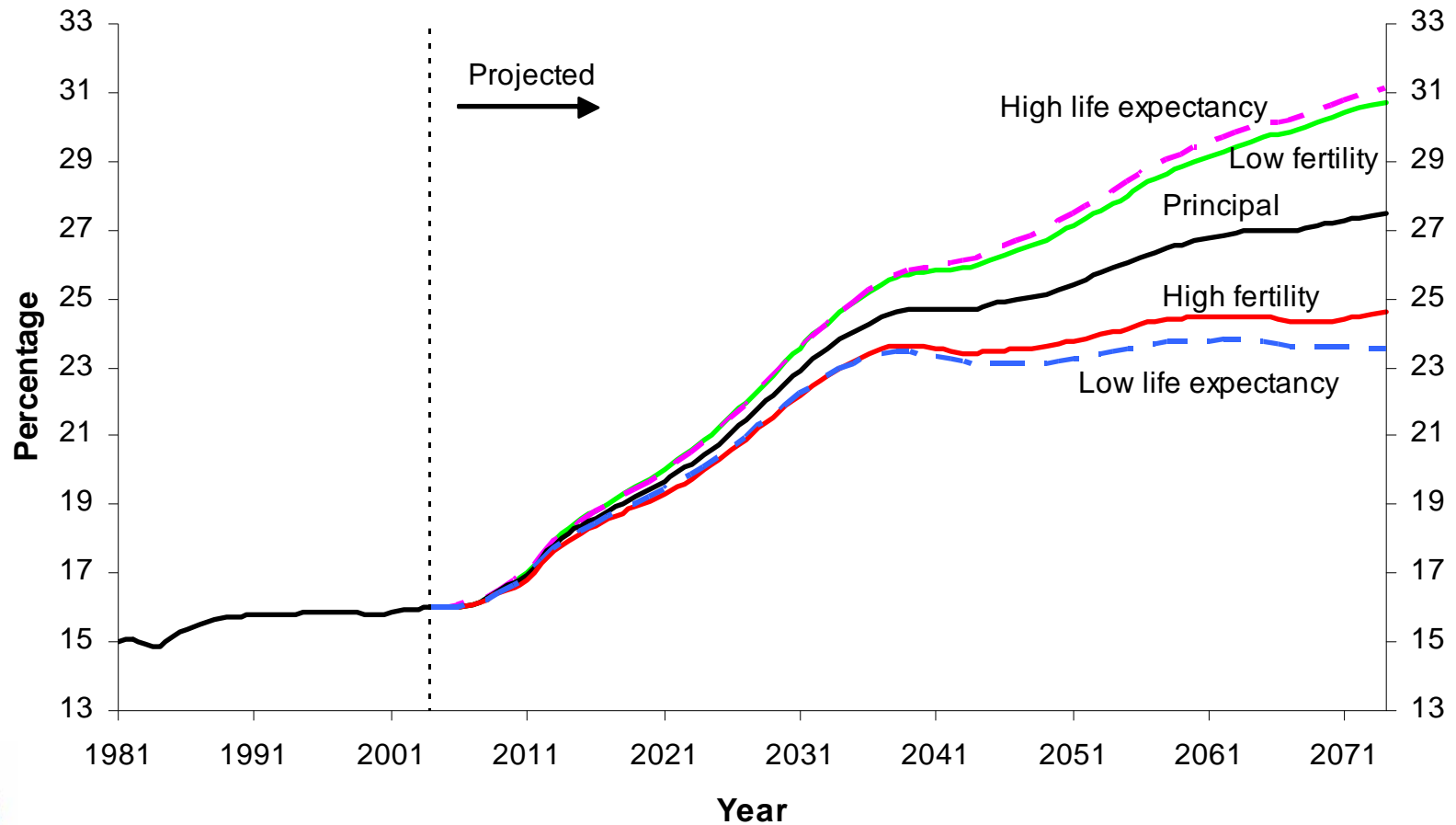
* www.gad.gov.uk

Annual improvement in smoothed mortality rates – Males UK



GOVERNMENT ACTUARY'S DEPARTMENT (GAD)

Proportion of the UK population aged 65 and over, 1981-2074 under various projection assumptions



Uses of GAD population projections

- > to act as control total for local area projections;
- > as foundation of labour force projections; and
- > as foundation of household projections
- > for all national planning, e.g. water supplies, teacher training capacity
- > for resource allocation and future plans
- > for social security analysis and reports



Role of Government Actuary in social security in the UK

- > five-yearly reviews of National Insurance Fund
- > ...with 60 year projections
- > updated more frequently as necessary
- > reports on annual uprating of benefit
- > financial consequences of reform proposals and new draft legislation
- > reports to Parliament are in the name of and are the personal responsibility of the Government Actuary



Annual uprating

- > Minister makes proposals to Parliament
- > Minister's report accompanied by GA's report
- > assesses balance of income and outgo
 - > over next few years
 - > over medium term
- > GA advises on whether supplementary grant from general revenue will be necessary



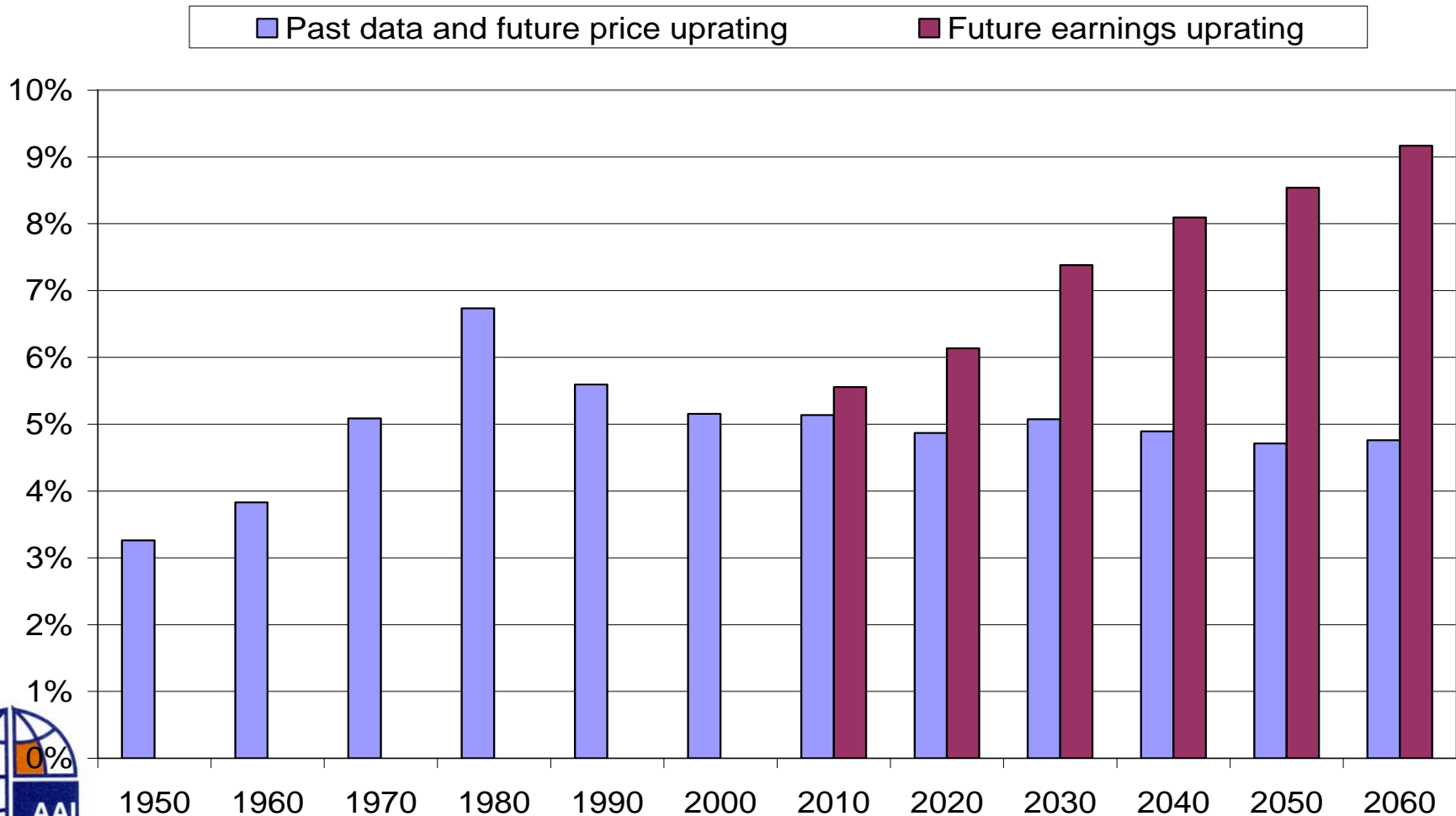
5 yearly Review

- > GA's report to Parliament on long-term
- > projections of income and expenditure
- > contributions necessary to maintain balance
- > development of size of fund
- > implications for individual entitlements
- > sensitivity to most important factors
- > impact of recently introduced changes



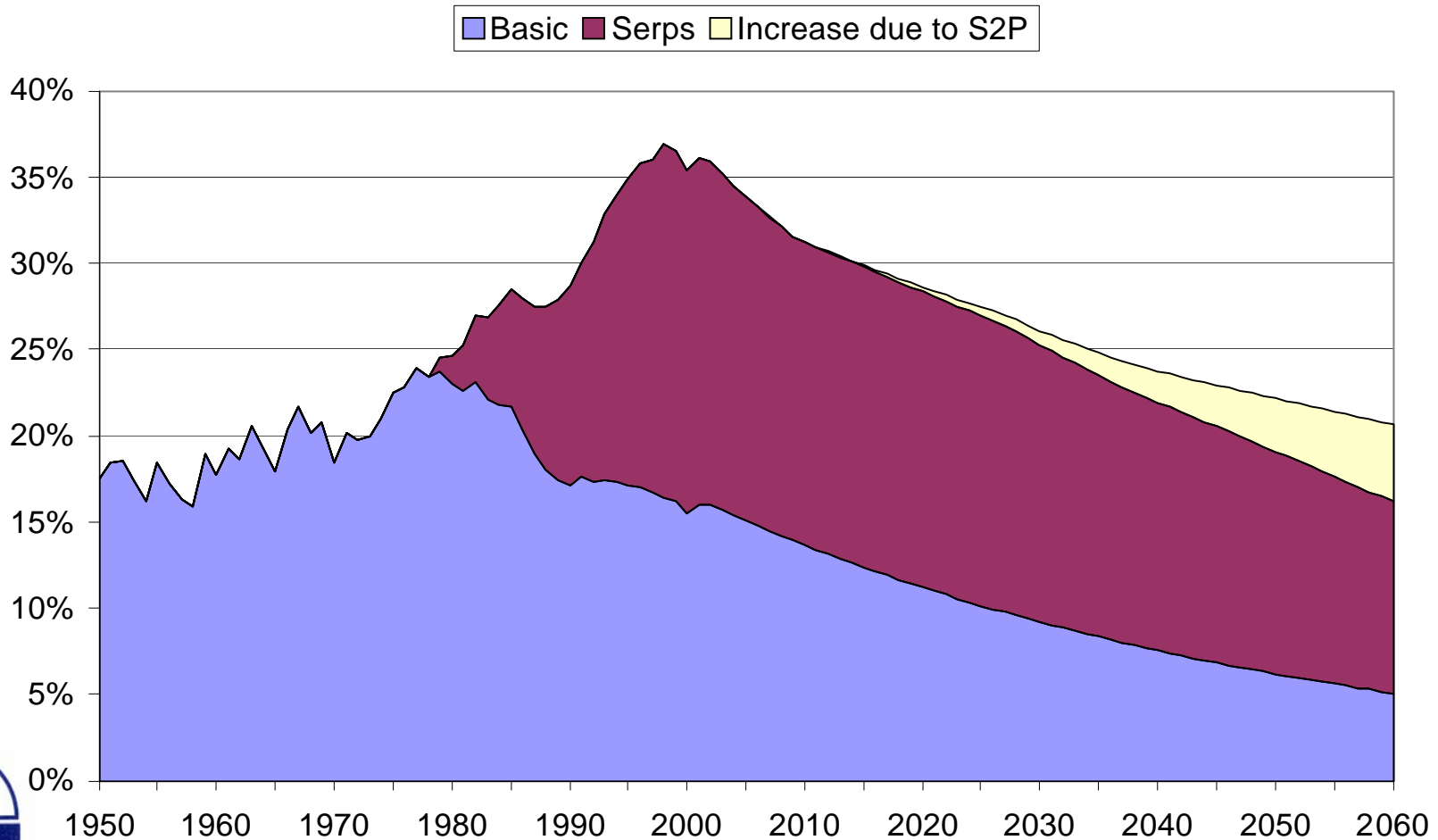
GOVERNMENT ACTUARY'S DEPARTMENT (GAD)

Benefit expenditure as % of GDP (assuming 2% a year real earnings growth)



GOVERNMENT ACTUARY'S DEPARTMENT (GAD)

Pensions by year of award as % of earnings (at average earnings levels)



GAD's professional independence

- > pressures from government
- > sometimes a desire to suppress information
- > need for transparency in reform process
- > disparate interests of different players
- > potential conflicts with other forecasts
- > GAD stands apart from political process
- > GA's right to determine scope of report
- > ...and to decide content and assumptions



Pension policy and regulation

Advice on

- > social security and pensions policy
- > the Pension Protection Fund (guarantee fund)
- > legislation concerning private pension funds
- > regulation of private pension funds
- > taxation policy for pension funds
- > policy and financing of public sector pension plans



The Pension Regulator

- > GAD staff seconded to regulator
- > others advise on particular projects
 - > standard setting
 - > codes of practice
 - > individual cases
 - > professional issues
- > work with team managing potential high profile cases where early intervention is needed



Advice to public sector pension schemes

- > teachers
- > health service workers
- > judges
- > armed forces
- > police
- > Members of Parliament
- > ...and many others



GOVERNMENT ACTUARY'S DEPARTMENT (GAD)

Advice to insurance regulators

- > principal actuarial adviser to UK insurance regulator
- > ...from 1960 to 2001
- > responsible for introduction of Appointed Actuary system
- > main player in supervision of life companies
- > adviser on reserving level of general insurance companies
- > now separate actuarial team (30+) at FSA
- > GAD advises regulators outside the UK



GOVERNMENT ACTUARIES

Alternative models

- > Government Actuary's Department
- > employ actuaries in individual departments and regulators
- > have a central actuarial unit in Ministry of Finance, Ministry of Social Security, or some other department
- > actuarial unit in regulator – providing advice more widely
- > use private sector actuarial firms for particular jobs
- > try to get by without any actuarial advice!



GOVERNMENT ACTUARIES

Some other countries

- > Canada – Office of the Chief Actuary
- > Australia – Office of the Government Actuary
- > USA – Chief Actuary, Social Insurance Administration
- > ...and actuaries in Insurance Commissioners' offices
- > Japan – Chief Actuary of the Ministry of Welfare



Advantages of having a GAD - 1

- > ready availability of actuarial advice
- > good value for money
- > continuity and consistency of advice
- > confidentiality
- > reliability and defensibility
- > absence of commercial conflicts of interest



Advantages of having a GAD - 2

- > critical mass for recruiting actuaries
- > professional environment – easier to maintain quality
- > viable for remuneration and keeping staff
- > readily available for government departments
- > centre of expertise and excellence in actuarial work related to public policy



Government Actuary's Department

expertise, experience and independence

